Industrial Equipment News

FOUNDED 1933

ORIGINAL REPORTER OF *What's New* IN EQUIPMENT, PARTS, MATERIALS

AFFILIATED WITH THOMAS REGISTER OF AMERICAN MANUFACTURERS

If you write maker identify as **IEN - 11970**

PAINTING . . Double nozzle gun sprays Nu-Pon A resin and catalyst

Source: BINKS MFG. CO.
3112 Carroll Ave., Chicago 12, Ill.

Catalyst initiates curing action

Illustrated is new equipment developed by the company to apply the Glidden Company's new resin-base protective finishing material known as Nu-Pon A. This finish is further development of the Nu-Pon material, previously described IEN-5237-52, for use as a primer on metal products. It is particularly suited for maintenance painting metal vessels and structures to prevent corrosion, weathering and attack by airborne chemicals.

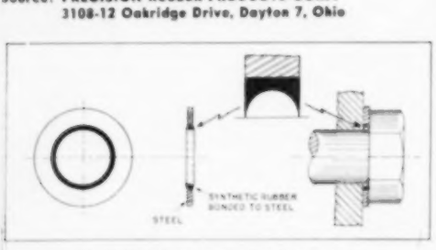
The resin remains stable until it is mixed with catalyst in the air directly in front of the spray gun. It then air-sets quickly to cover the surface at which the gun is directed. Single-finish films, to 10 mils or more, can be applied without running or sagging. One coat usually is sufficient.

The spraying equipment employs separate tanks for the resin and the catalyst with air supply connected to the resin tank and a pressure equalizing hose reaching from the resin to the catalyst tank. The two materials flow at equal pressure to separate delivery points in the gun.

If you write maker identify as **IEN - 11971**

SEALING . . Rubber-steel ring for use between circular flat surfaces

Source: PRECISION RUBBER PRODUCTS CORP.
3108-12 Oakridge Drive, Dayton 7, Ohio



Illustrated data in Dyna-Seal Bulletin

Synthetic rubber, in the form of a ring, is bonded in the bore of a flat steel ring to make this new Dyna-Seal unit. It prevents radial leakage between circular flat surfaces. Applications include use under bolt heads, rivet heads, flanges. Prior to compression, the rubber extends in a V-shape beyond both faces of the steel ring. When pressure is applied it forms a cup-shaped gasket that is capable of sealing pressures to 10,000 pounds.

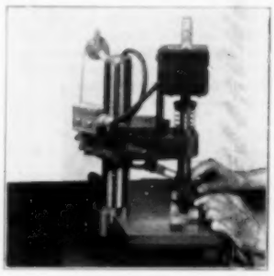
The seal is suited for use with air, gas, petroleum products, chemical solutions, hydraulic fluids, water. It remains serviceable in a temperature range between minus 65 and plus 250 deg. F. The rubber portion acts as the seal. The ring provides the bearing against which the surfaces can be pulled up tight. Sizes range from 0.281 to 1.260 in. in inside diameter by 0.422 to 1.844 in. outside. Thickness is 0.054 to 0.090 inch.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 11972**

RIVETING . . Staking machine holds work and strikes adjustable blow

Source: BLACK & WEBSTER INC.
443-45 Watertown St., Dept. N-8, Newton 58, Mass.



About $155

Spring loaded solenoid in this new Electrostake machine is mounted vertically in a bracket that is adjustable on a vertical column above a work supporting base. Assembled on the bracket is a pivoted hold-down arm fitted with a sleeve mounted in a bronze bearing. It presses the work pieces together so they can be staked by hammer action from the solenoid.

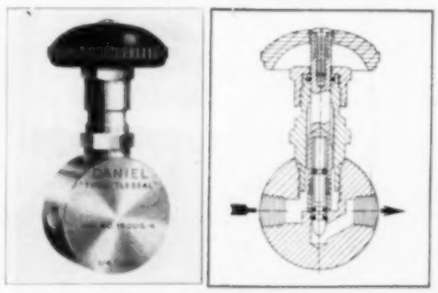
A foot pedal, connecting by means of a wire rope, hinges the bracket downward upon the work until a predetermined pressure has been reached. At this point a limit switch closes the solenoid circuit to deliver the staking blow. The staking plunger is returned to its "up" position by the action of a spring beneath the solenoid and the operator can release pressure on the foot pedal to remove the work for the next operating cycle.

The machine mounts on a bench. It measures about 1 by 1 ft. over its base and weighs 45 pounds. Operation is on 110-volt 60-cycle ac. Equipment includes a blank tool set consisting of a hold-down pad and a punch or staking tool which operates through the pad. The machine base is slotted to assist in securing fixtures in proper position. Three models are available. The largest can deliver maximum impact of 3,000 pounds. In each machine this impact, once set, will not alter from one work piece to the next.

If you write maker identify as **IEN - 11973**

VALVE . . For throttling service to 3,000 lb., ¼ and ½ in. sizes

Source: DANIEL ORIFICE FITTING CO.
3356 Union Pacific Ave., Los Angeles 23, Calif.



Shown in closed position

Thrutlesseal trade names a new line of stainless steel valves in globe or angle pattern. The design is characterized by a stem that threads into the bonnet to position a piston-type plug in the port for throttling action or to close the port and seal it by means of two O-rings. The plug and O-rings do not rotate when the stem is turned. The rings lie in protected position inside a retracting sleeve that moves forward as the stem is rotated to open the port.

Flow can be adjusted from a little under 1 per cent of the effective area to full open position. The valve will handle liquids, gases, air or vapor at pressure to 3,000 lb. and temperature in a range between minus 40 and plus 225 deg. F.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

NOVEMBER, 1952

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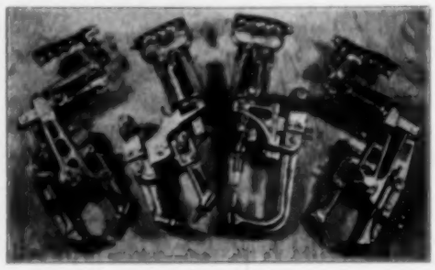
If a post card with your address stencil is attached to the front of this issue please check and return it at once so we can verify your address and continue your name on our mailing list. No cost—no obligation. Thanks.

If you write maker identify as IEN - 11974

WELDING . . Spot welding guns made up of standardized components

Source: PROGRESSIVE WELDER SALES CO. 3051 E. Outer Drive, Detroit 34, Mich.



To minimize maintenance

Four new guns have been added to the company's line of spot welding equipment, previously described IEN-6613-48, in which a range of types can be assembled from standardized components. The new guns are featured by simplified design to minimize the number of required parts. Water cooling has been improved and weight has been cut down as compared to the previous design. Each gun is built to stand up under rough service for either pneumatic or hydraulic operation.

If you write maker identify as IEN - 11975

METAL . . Age hardened bronze contains nickel and phosphorus

Source: CHASE BRASS & COPPER CO. 236 Frank St., Waterbury 20, Conn.

Resistant to fatigue and creep

Phosnic is a new copper alloy that has been developed by the company for manufacture of products such as springs, clips, electrical conductors, screws, cotter pins. The alloy is characterized by strength, excellent electrical or thermal conductivity, resistance to fatigue and creep and workability.

It is available in round wire ranging from 0.016 to 0.650 in. in diameter, in flat rolled wire from 0.003 by 0.012 in. to 1.00 by 0.125 in., in round rod and from $\frac{1}{16}$ to $1\frac{3}{4}$ in. and in hexagon from $\frac{1}{16}$ to $.1\frac{1}{4}$ in. across the flats. It is supplied age hardened or age hardened and cold worked in a range of tempers.

The aging treatment increases tensile strength from about 38,000 to about 65,000 lb. per sq. in. with increase in yield strength from about 10,000 to 40,000 lb. per square inch. The hardened alloy is suitable for severe cold working in the heat treated condition including drawing to full spring temper.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 11976

DUFF-NORTON Worm Gear Jacks

These jacks may be used singly, in tandem or in groups of four, six or eight, connected by means of shafts or mitre gears for raising and lowering mill tables, machine beds, presses, and many other applications. Capacities vary from 5 to 50 tons, with raises from 3" to 35½. Jacks are furnished in accordance with load to be jack, raise required and application.

For suggested applications write for Bulletin AD-5 IEN

THE DUFF-NORTON MANUFACTURING CO.
MAIN PLANT and GENERAL OFFICES, PITTSBURGH, 30, PA.
CANADIAN PLANT, TORONTO 5, ONT.

If you write maker identify as IEN - 11977

BIG ROLE in industry

New Departure Ball Bearings play a big role in simplifying product design. N-D-Seal bearings, for example, often require less housing space and fewer parts, make possible greater streamlining and longer life. New Departure's nationwide engineering service is always at *your* service.

NOTHING ROLLS LIKE A BALL

NEW DEPARTURE
BALL BEARINGS

NEW DEPARTURE • DIVISION OF GENERAL MOTORS • BRISTOL, CONN.

If you write maker identify as IEN - 11978

SNUFFS OUT **FIRE**

Just squeeze the trigger. Poof! Out goes the fire. *Kidde* Carbon Dioxide Portables smother fire instantly. No fuss, no muss, no fumes. Write for full information.

Kidde

Walter Kidde & Company, Inc.
1136 Main St., Belleville 9, N. J.

The word "Kidde" and the Kidde seal are trade-marks of Walter Kidde & Company, Inc. and its associated companies

If you write maker identify as IEN - 11979

EASY-FLO . . . THE KEY TO MODERN DESIGN AND PRODUCTION

CASE ASSEMBLY brass sleeve and stamped steel case

Recently a new cylindrical lock was developed for the Russell & Erwin and P. F. Corbin Divisions of the American Hardware Corp. Parts were designed for EASY-FLO brazed construction and results verified once more the speed, reliability and low cost of this modern method of fabricating metal assemblies. Case assembly at left is induction brazed with EASY-FLO wire ring preplaced, 6 at a time in 31 seconds. Three other assemblies are similarly brazed in fast time.

BULLETIN 20 *tells all about the fast, low-cost EASY-FLO way to produce high-strength metal assemblies. Write for a copy — today.*

85th Anniversary

HANDY & HARMAN 82 Fulton St., New York 38, N. Y.

If you write maker identify as IEN-11980

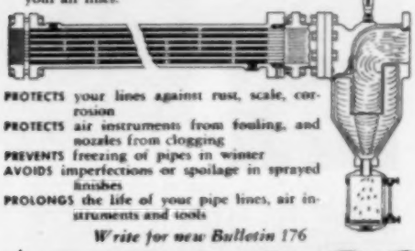
You Can be Sure of Clean Dry Air for your Compressed Air Tools

3500 Gallons

1 YEAR'S water extraction from air lines equipped with Adams Aftercooler and Cyclone Separator

with ADAMS Aftercooler and Cyclone Separator

● Reducing compressed air temperature to within 10° of the cooling water, Adams Equipment condenses and removes destructive water and oil vapors from your air lines.



PROTECTS your lines against rust, scale, corrosion
PROTECTS air instruments from fouling, and nozzles from clogging
PREVENTS freezing of pipes in winter
AVOIDS imperfections or spoilage in sprayed finishes
PROLONGS the life of your pipe lines, air instruments and tools

Write for new Bulletin 176

R. P. ADAMS CO., INC. 219 E. PARK DRIVE BUFFALO 17, N. Y.

If you write maker identify as IEN-11981

it's STRONG

it's FLEXIBLE

and it SAVES YOU money

SECURITYFLEX*
PORTABLE CORD

Anaconda Wire & Cable Company, 25 Broadway, New York 4, N. Y.

the right cable for the job

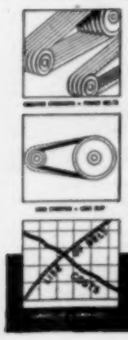
ANACONDA® WIRE AND CABLE

*Trademark

If you write maker identify as IEN-11982

BROWNING STEEL CABLE GRIPBELTS

MORE Strength • LESS Stretch



Browning Steel Cable Gripbelts are much stronger than ordinary belts. They will safely carry heavier loads with fewer belts. They will stretch less and give longer life without loss of power and efficiency.

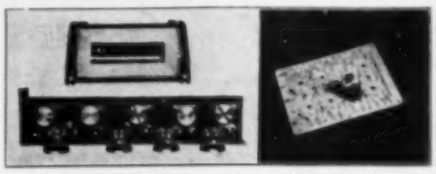
Write FOR LIST PRICE SHEET V-163-A

BROWNING MANUFACTURING CO.
INCORPORATED
MAYSVILLE, KENTUCKY

If you write maker identify as IEN-11983

ELECTRIC CIRCUITS . . Conductors bonded to base in specified outlines

Source: SYLVANIA ELECTRIC PRODUCTS INC.
43-22 34th St., Long Island City 1, N. Y.



Company's engineers will assist in design

The company announces availability of prefabricated circuit wiring for electronic and electrical equipment, following its acquisition of Franklin Airloop Corporation and its continuing manufacture of this type of circuit, previously described IEN-3251-51. Die stamped basic circuit wiring is formed from a sheet of conducting material and simultaneously is attached by an adhesive to a sheet of insulation.

The complete circuit eliminates hand wiring and soldering operations. It permits soldering by dip methods where any is required. Tubes and other components can be operated under conditions close to specified tolerances. The stamping process is particularly suited for production of high frequency equipments in the range between 20 and 200 megacycles. When an inductance has been stamped it is permanently imbedded in the insulating plate and its value will remain reasonably stable. The company's engineers and scientists are available to study given problems and assist in adapting the stamped circuit design.

If you write maker identify as IEN-11984

METER . . Current reactor safely measures dc. to 120,000 amperes

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

Two sizes are illustrated

Two toroidal coils are assembled in a shell made of glass-reinforced polyester resin. The assembly slips over a dc. bus bar so the bus need not be broken or bolted connections made at the point of measurement. The coils are saturated by the dc. in the bus until ac. measuring current is applied at 110 volts 60 cycles.

The ac. desaturates the core of one coil on one-half cycle and the other core on the following half cycle. The point of desaturation limits the ac. current so its value, indicated on an ammeter, can be employed to read intensity of the dc. saturation and thus indicate the dc. current.

Standard models are available with rating from 1,000 to 10,000 amp. and the new unit can be specified with capacity to 120,000 amp. on special orders. It is particularly suited for users of large amounts of dc. power such as electrochemical, steel and aluminum industries.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-11985

SAFETY EQUIPMENT FOR ALL INDUSTRIES

IPCO LAMP CHANGERS

PRACTICAL • TIME SAVING • PREVENTS PERSONAL INJURIES

FOR CEILINGS, SIDE WALLS, ELECTRIC SIGNS, ETC. • HEAD ADJUSTS TO ANY ANGLE

Designed to remove and replace lamp bulbs in high and out of way places . . . Works like human hands on the end of a pole . . . Handles lamps up to 500 watt; pole lengths 6', 12' and 15'.

WRITE FOR BULLETIN NO. 46

IPCO Safety Equipment for all Industries
INDUSTRIAL PRODUCTS COMPANY
2801 N. FOURTH STREET • PHILADELPHIA 33, PA.

If you write maker identify as IEN-11986

LUBRICATION ECONOMY

LUBRIPLATE SAVES 7 TIMES ITS COST!

This remarkable saving was reported to us by the Wolverine Shoe & Tanning Corporation of Rockford, Michigan. Their unsolicited letter stated—"*For every dollar we pay for LUBRIPLATE Lubricant No. 100 we save $7.00 in chain replacement*". You, too, can enjoy the savings made possible with LUBRIPLATE Lubricants.

1. LUBRIPLATE reduces friction and wear
2. LUBRIPLATE prevents rust and corrosion
3. LUBRIPLATE is economical to use

Write today for case histories of savings made through the use of LUBRIPLATE in your industry.

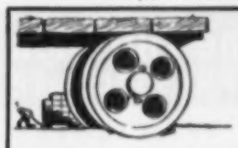
VISIT OUR BOOTH PLANT MAINTENANCE SHOW CLEVELAND JAN. 19-22, 1953

LUBRIPLATE DIVISION

Fiske Brothers Refining Co., Newark 5, N. J. • Toledo 5, O.

DEALERS EVERYWHERE, consult your Classified Telephone Book

If you write maker identify as IEN-11987



IN A Rut?

DON'T LET WORN FLOORS SLOW UP PRODUCTION!

A *real* heavy-duty floor must be concrete—*good* concrete. 'Incor' 24-Hour Cement assures stronger, longer-lasting, heavy-duty concrete floors—by curing THOROUGHLY in 24 hours, instead of a week or more.

Don't let worn-out floors slow production—rebuild floors over a week-end with 'Incor'*—no plant tie-up—no time-loss!

Write for booklet, "Heavy-Duty Floors"—address Lone Star Cement Corporation, 100 Park Avenue, New York 17.

*Reg. U.S. Pat. Off.

LONE STAR CEMENT CORPORATION

Offices: Abilene, Tex. • Albany, N. Y. • Bethlehem, Pa. • Birmingham • Boston Chicago • Dallas • Houston • Indianapolis • Kansas City, Mo. • New Orleans New York • Norfolk • Philadelphia • Richmond • St. Louis • Washington, D. C.

If you write maker identify as IEN-11988

Survey by Leading Motor Manufacturer Proves

NORMA-HOFFMANN PRELUBRICATED "CARTRIDGE" BEARINGS

Slash Motor UPKEEP COSTS

A recent survey of over 131,626 A-C motors shows the use of "Cartridge" Prelubricated bearings saved a yearly average cost of $270.00 per hundred motors by eliminating periodic relubrication.

In addition to this $270.00 saving, motors using "Cartridge" bearings showed an indicated saving of $480.00 by reducing motor outage, lost machine time and man-hours.

A total yearly saving of $750.00 per hundred motors! You, as a manufacturer of motors, machine tools, pumps or other machinery can pass these savings to your customers by using Norma-Hoffmann "Cartridge" Ball Bearings. How — because these patented bearings require no periodic relubrication.

Made to double-row width, Norma-Hoffmann "Cartridge" single-row ball bearings have 100% more grease capacity than conventional width sealed bearings. The highly efficient seals keep dirt out, grease in. Factory-packed with Norma-Hoffmann's specially compounded "stability-tested" grease...grease that is highly resistant to oxidation and break-down ... ensures dependable operation for long periods without regreasing.

Use Norma-Hoffmann "Cartridge" Ball Bearings in your products. Our engineers are always available for consultation on your bearing applications. Write for their services.

NORMA-HOFFMANN Precision BEARINGS
BALL • ROLLER • THRUST

NORMA-HOFFMANN BEARINGS CORPORATION • STAMFORD, CONN.
FIELD OFFICES: Atlanta, Birmingham, Charlotte, Chicago, Cincinnati, Cleveland, Dallas, Detroit, Jacksonville, Kansas City, Los Angeles, San Francisco, Seattle

If you write maker identify as IEN-11989

Have you heard about

THE LUBRICANT OF MANY USES

Moly-sulfide ?

A LITTLE DOES A LOT

In the shop—In the field

Moly-sulfide is a solid-film lubricant, highly successful in applications involving extreme pressures, high velocity, fretting, elevated temperatures and other difficult frictional conditions. We have compiled detailed records of 154 different applications of molybdenum sulfide to actual shop and field problems—some of which might be similar to your own.

Shopmen, engineers, lubrication specialists—write now for a copy of this new 40-page booklet.

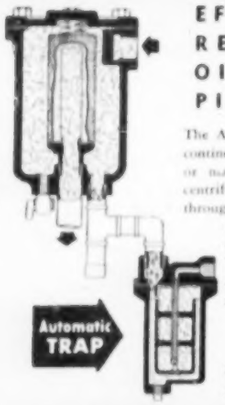
SEND FOR THIS FREE BOOKLET TODAY

Climax Molybdenum Company
500 Fifth Avenue · New York City 36 · N·Y

MS4-A

If you write maker identify as IEN-11990

Poro-Stone Filtration FOR COMPRESSED AIR



EFFICIENTLY REMOVES OIL, WATER PIPE SCALE

The Adams *Poro-Stone Filter* gives continuous service without attention or maintenance expense. Efficient centrifugal separation *plus* diffusion through Poro-Stone, removes contamination completely without pressure loss. Automatic Trap eliminates attention and assures continuous and efficient filter operation.

Write for complete data Bulletin 176

R. P. ADAMS CO., Inc.
219 E. Park Dr., Buffalo 17, N.Y.

ADAMS *Poro-Stone* AIR FILTER

If you write maker identify as IEN-11991

Star Performers ON LOW PRESSURE LINES

CRANE WEDGE DISC BRASS GATE VALVES

Want a better working, better looking brass gate valve for saturated steam, hot and cold water lines, heating systems and similar low pressure service? You'll find it in this modernized Crane design with non-rising stem and guided wedge disc. Note in particular the cylindrical shape of the upper part of the body. Here is maximum strength without bulk—solid reinforcement against line and operating strains.

There's extra strength at the wide-faced hex ends, too, and the accurately cut threads pull up smoothly and evenly. Also available with solder-joint ends. Send for folder AD-1725.

WORKING PRESSURES
100 pounds saturated steam
150 pounds water, 200° F
150 pounds oil or gas, 150° F.
Screwed ends
Sizes ¼ to 2 in.

CRANE CO., 836 S. Michigan Avenue, Chicago 5, Ill.
Branches and Wholesalers Serving All Industrial Areas

CRANE *Everything for Every Piping System*

VALVES • FITTINGS • PIPE • PLUMBING AND HEATING

Industrial Equipment News

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Vol. 20 NOVEMBER, 1952 No. 11

Let the Makers Help

One of our representatives reported a call on the advertising manager of a company selling stainless steel. Here is what he told us—

"I was part way through my presentation showing how IEN's distribution of readers, across all of the industry divisions, includes production, plant operation, puchasing, as well as product design, when he interrupted me to say that we might do a job for them.

"He went on to say that every once in a while one of their salesmen would return to the office badly disappointed because he had lost an order for the special steel. This happened several times. A checkup found that the same reason applied in each case.

"The salesman had sold the prospect's sales department on the steel as a means to produce a better product. He had sold management as well. But when the plant men were called in to discuss the new plans these men would kill the action. They would say that they could not weld the stainless, or shape it or do this or that to it and thus the order would be lost.

"The advertising manager showed me a series of booklets he had just about completed to meet this condition by assembling information useful to plant men on handling the steel, and on working and finishing it. He had designed these booklets as a service to provide plant men with practical information and suggestions. He had based each one on experience gathered by his steel making and application experts who had run into and licked about every difficulty.

"He believed that a good many of IEN's readers would be the men to whom he wanted to offer the booklets. Accordingly he gave me a schedule of advertising. I am enclosing it with this report. I also am mailing a set of the booklets to our editorial department. They are brand new and represent first class material for our Useful Information columns."

We tell you about this report, which came in a number of years ago, to give you a little insight into a typical source for information that manufacturers assemble and IEN brings you month by month on many subjects. You will find it initially in the Useful Information columns. You will see it in the advertising in succeeding months as the manufacturers follow up our descriptions.

Each piece is aimed to help you meet problems that are bound to arise each time your engineers design a new component or material into your products. There you will find suggestions on new procedure, tools, equipment for production and plant realignment, directly from the men who have solved the problems for you.

Watch for the new materials and product components as they appear in IEN's editorial descriptions. Check both the editorial columns and the advertising for useful information offered by the makers on these new subjects. Then you will be ready to answer most any problem that can come up as the result of a new design in the products you are making.

Some of our readers have assembled a "library" of this material by requests through IEN and by checking succeeding issues to keep the subjects up to date. Let the materials and component makers help you also. They will be glad to.

W. E. Irish.

If you write maker identify as IEN-11992

The most useful CHRISTMAS GIFT your company can give this year!

"JIFFY"

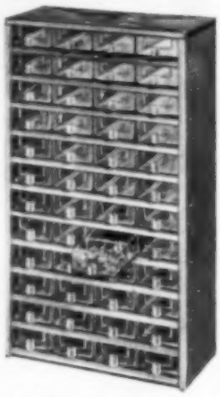
METAL STORAGE CABINETS with

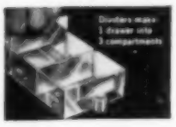
"lifetime guaranteed"

PLASTIC DRAWERS

ALL BOXED AND CAREFULLY PACKED FOR SHIPMENT TO YOUR FAVORITE CUSTOMERS

There isn't a man on your gift list who wouldn't be tickled pink with one of these multi-use cabinets. He'll use it in his home, his shop, his office . . . and he'll remember you gratefully for years to come.





Drawers are 5¾" deep, 7¾" wide, 1¾" high. Safety catch ends accidental spilling. Identity card drops into slot in drawer front.

Made in 7 sizes:

J-64	64 drawers (192 compartments)	$22.95
J-48	48 drawers (144 compartments)	18.75
J-32	32 drawers (96 compartments)	11.95
J-24	24 drawers (72 compartments)	9.95
J-16	16 drawers (48 compartments)	6.95
J-12	12 drawers (36 compartments)	5.25
J-8	8 drawers (24 compartments)	3.95

AK-5 Adapter Kit for dividing 8 drawers LENGTHWISE (crosswise dividers FREE with each cabinet) .50

AKRO-MILS, INC.
Box 989
AKRON 9, OHIO

SEND FOR FREE DESCRIPTIVE FOLDER

If you write maker identify as IEN-11993

S-A WINCHES SAVE TIME and MANPOWER

There are many lifting and pulling jobs around a plant which can be handled quickly, safely and more economically by an S-A hand-powered or motorized winch. A variety of S-A winches are available, enabling one man to lift loads up to 3000 pounds.

Write for Bulletin No. 340 for complete details.

Both Hand and Motor types for all kinds of hoisting jobs.

STEPHEN S-ADAMSON MFG. CO.

Tellevel-Bin Level Controls · Saco Speed Reducers · Car Leaders · Car Pullers · Winches · SealMaster Ball Bearings

231 RIDGEWAY AVE., AURORA, ILLINOIS

If you write maker identify as IEN-11994

Stands Extreme Punishment on School Buses!

More proof that PABCO MASTIPAVE is the floor covering for YOU!

Listen to the President of Ward Body Works, bus builders of Conway, Arkansas, and Mexico City

"Nothing on earth is more damaging to bus floors than feet of school children. To stand up, a most durable floor covering is needed. We install Mastipave and Grip-Tread in more than 1500 buses each season. With more than 5 years' service have found Mastipave and Grip-Tread in good condition and ready for several more years. It doesn't crack or wear out—you've got to wear it *off!*"

PABCO MASTIPAVE *in roll goods and tiles*

GRIP-TREAD *in roll goods only*

- Proved, for over 28 years—in schools, industries, hospitals, public buildings.
- Costs little, looks good, wears long.
- Worth investigating, for YOUR toughest job?

SEND NOW FOR THE FULL STORY OF MASTIPAVE

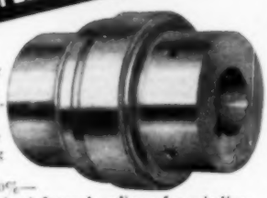
PABCO PRODUCTS INC.
New York 16 • Chicago 54 • San Francisco 19
(Mail to Dept. E, nearest office)

GENTLEMEN: Without cost or obligation to me, please send folder, "Every Building Needs Pabco Mastipave."

NAME _____
ADDRESS _____
CITY _____ STATE _____

If you write maker identify as IEN-11995

new design...
Adds 50% to safe maximum speeds of
LOVEJOY FLEXIBLE COUPLINGS



With the collar held in place by a special multiple leaf spring, this new Lovejoy Flexible Coupling handles speed increases up to 50%—with complete safety! Instantly adjusts for misalignment, vibration, surge or backlash. No wear on metal jaws — no tear-downs to change cushions — no lubrication ever needed! Lovejoy Couplings are for services from 1/6 to 2,500 H.P.

Write for catalog with handy selector charts

LOVEJOY FLEXIBLE COUPLING CO.
5014 WEST LAKE STREET • CHICAGO 44, ILLINOIS
Also Manufacturers of Lovejoy Universal Joints and Lovejoy Variable Speed Transmissions

If you write maker identify as IEN-11996

ONLY SEALMASTER BALL BEARING UNITS
Offer ALL these features...

★ Permanently Sealed
★ Self-Aligning
★ Pre-Lubricated

Replace worn bearings with SealMasters. They give lasting service and economy. Only SealMaster bearings combine the features essential to smooth operation, long life, easy installation and top performance in quiet power transmission.

★ Flange Units
★ Pillow Blocks
★ Take-up Units
★ Cartridge Units
★ Flange Cartridge Units

Write us for YOUR free copy of SealMaster Catalog No. 845

BEARING DIVISION
STEPHEN S-ADAMSON MFG. CO.
Tellevel—Bin Level Controls · Car Loaders · Variable Speed Reducers · SealMaster Ball Bearings · Car Pullers · Winches · Saco Speed Reducers
231 RIDGEWAY AVE., AURORA, ILL.

If you write maker identify as IEN-11997

SAVE UP TO 85%
WAR SURPLUS SAVINGS

NEW INSIDE-OUTSIDE VERNIER CALIPERS — 9.75, 9.75
STAND MAGNIFIER — 1.49
RINDE HYDRAULIC PUMP & MOTOR — 19.50
MAGNETIC BASE-INDICATOR HOLDER — 3.50
HYDRAULIC HAND PUMP — 12.75
GEAR HEAD MOTORS — 10.95 EA.
HYDRAULIC ACCUMULATORS — 12.75, 19.75
ELECTRIC ACTUATORS — 7.95
HYDRAULIC CYLINDERS — 29.75
No. 3 HYDRAULIC CYLINDER — 5.75
250-PG. CATALOG

PALLEY SUPPLY CO.
2001 E. VERNON AVE. Dept. IN-11
LOS ANGELES 58, CALIF.

If you write maker identify as IEN-11998

WELDING . . Gas shielded arc torch, water cooled, 300 amp. rating

Source: LINDE AIR PRODUCTS CO.
30 E. 42nd St., Room 308, New York 17, N. Y.

Based upon water cooling

Cooling water flows directly into the body of this new Type HW-10 Heliarc torch. It is circulated to the head, through the water jacket, back through the head again and out through the power cable. The cooling action permits bringing the electrode collet body close to the arc, without danger of damaging it from excess heat, and so minimizes electrode stub loss. The torch is suited to weld any commercial metal to about ⅛ in. in thickness. Rated capacity on continuous duty is 300 amp. with either high-frequency stabilized ac. or straight polarity dc.

The torch is designed for quick change and adjustment of the electrodes without tools. Interchangeable collets are available in four sizes between 0.04 and 0.125 inch. Two torch caps permit the use of either 3-in. or 7-in. electrodes. Metal gas cups are conduction cooled through their threaded connection to the water jacket. The torch body is sheathed and electrically insulated in plastic.

Plastic, applied to the water jacket, prevents arc flash-over between the jacket and the electric ground. Water passages are accessible for quick cleaning to remove lime deposits that might be caused by hard water.

If you write maker identify as IEN-11999

RELAY . . Actuates solenoid valve to protect the operation of equipment

Source: ROBOTRON CORP.
21302 W. 8-Mile Road, Detroit 19, Mich.

Ready to install

Water flow is turned on and off by this new relay in connection with welding equipment, or air compressors, to make certain that cooling water is flowing while the equipment is in action and that it is turned off when the equipment is stopped. Gas flow can be started and stopped also in supply lines to burners and torches in similar manner.

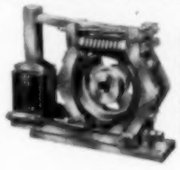
The relay controls three circuits in application on a welding machine. In this service it is known as the Water Saver. It is actuated, when the welder operator closes his initiating switch, to close the circuit to the solenoid valve in the water line so the water starts flowing through its cooling lines and passages. It closes the circuit to the heating elements in the flow switch on the welding machine and then closes the ignitor circuit so the welding contactor can be operated.

The circuits remain closed as long as welding continues, with not more than a 1.5-min. delay interval. The circuits open and flow stops on any longer interval.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-12000

TROMBETTA SOLENOID CORP.
331 N. MILWAUKEE ST. • MILWAUKEE 2, WIS.



SINGLE SOLENOID SB-271 BRAKE 10" DIA. 1" FACE 475 FT.-LBS. CONTINUOUS DUTY

DOUBLE SOLENOID SB-300 BRAKE 24" DIA. 10" FACE 2400 FT.-LBS. CONTINUOUS DUTY

SB-300 LINE OF BRAKES
Sizes 2½" dia. x 1½" face to 72" dia. x 14" face, continuous rating range from 3 ft.-lbs. to 24,000 ft.-lbs.

8 SPECIAL FEATURES
(1) Operated by long stroke, high power large capacity solenoids. (2) Only 50% of solenoid stroke is used to release the brake. The extra 50% is reserve to take care of lining wear. (3) They can be used for stopping as well as for holding loaded motors. (4) In double solenoid type, one solenoid operates the brake and the other is a spare assuring uninterrupted operation. (5) They are available for all voltages and frequencies alternating current. (6) Also for all voltages direct current series or shunt connections. (7) In shunt operation no series resistances, no discharging resistances are necessary. (8) They are available with oil immersed and explosion proof solenoids.

NINE LINES OF SOLENOIDS, RECIPROMOTORS AND SEMOTORS
See McGraw Hill's Prefiled Electrical Catalogs, Write for Additional Information.

If you write maker identify as IEN-12001

Do You USE or NEED INFRARED HEAT?

THESE USEFUL **DATA SHEETS** *Show you how to* **SAVE TIME & MONEY** with **CHROMALOX** *Electric* **RADIANT HEATERS**

TELL US your application problems and we'll send you valuable information which may lead to improved production at decreased costs on the jobs for which you use or need infrared heat in your plant.

EDWIN L. WIEGAND CO., Industrial Div.
7505 Thomas Boulevard, Pittsburgh 9, Pa.
I need infrared heat for _____
Send me application file on above.
Name _____
Company _____
Street _____
City _____ Zone _____
State _____ IN-41

See Chromalox Heating Units Advertisement Page 11

CHROMALOX
ELECTRIC HEAT FOR MODERN INDUSTRY

If you write maker identify as IEN-12002

Special Self-Sticking BRADY QUIK-LABELS

In Colors, Sizes, Shapes and Wording YOU Need!

- PRODUCTION
- INSPECTION
- INSTRUCTION
- TRADEMARKS
- PARTS & SERIAL NUMBERS

THOUSANDS OF USES throughout Industry. Brady self-sticking QUIK-LABELS can be made to your special requirements. Come on handy dispenser cards or rolls. Quickly applied—durable—silicone coated to resist dirt, grease, moisture. Low in cost, inexpensive to apply. Save time and money. Send for complete details and FREE samples of these special labels, today.

DISTRIBUTED IN 125 PRINCIPAL CITIES.

MANUFACTURERS OF SELF-STICKING PRODUCTS
W. H. BRADY COMPANY
765 W. GLENDALE, MILWAUKEE, WISCONSIN

If you write maker identify as IEN-12003

ALLIS-CHALMERS *Rocking Contact* **VOLTAGE REGULATORS**

For VOLTAGE CONTROL of Small Alternating-Current Machines

ALLIS-CHALMERS Generator Voltage Regulators control voltage by automatically changing resistance in the exciter shunt field circuit. Only a small rocking movement of the contact sector over the curved commutator is required to cover the entire regulating range. Response is fast and accurate . . . sliding friction eliminated and wear minimized.

The V-00 regulator is used on ac generators with direct-connected exciters to 157 kva at 3600 rpm. Type 221 is used on ac machines with direct-connected exciters to 438 kva at 3600 rpm. These regulators can be modified for temperature compensation, shock mounting, or other special requirements.

Ask your A-C representative, or write Allis-Chalmers, Milwaukee 1, Wisconsin, for Bulletin 14B6143A. A-3421

Rocking Contact is an Allis-Chalmers trademark.

ALLIS-CHALMERS A-C

If you write maker identify as IEN - 12004

HORIZONTAL POWER . . .

. . . where Belt Surface Conveyors can't stand abuse of heavy metals, sharp corners or rough edges. Metzgar "Live Roller" units provide an all-metal, powered bearing surface. May be used as power booster in gravity line. Work can be slowed or held without stopping machine.

Furnished portable or permanent mounted. Choice of one to five rollers per foot. Lengths to suit. Ball bearing throughout. Gearmotor AC or DC drive.

4 STOCK SIZES 11½" - 15" 18" - 24" WIDTHS

ASK FOR FOLDER NO. 1249

METZGAR CO. METZGAR

MFGRS. OF WHEEL & ROLLER GRAVITY & LIVE ROLLER CONVEYORS • POWER BELT CONVEYORS • SWITCHES • ACCESSORIES • REEL DOLLIES & END-WOOD WHEELS.

417 Douglas, N. W.

GRAND RAPIDS 4, MICH.

If you write maker identify as IEN - 12008

MORE PRODUCTION..SAME SPACE.

A well-known metal partition manufacturer faced the problem of increasing production without enlarging building. New and better handling methods were obviously needed. They chose an American MonoRail overhead handling system as the best answer to increase capacity without increasing space and with less handling labor. Now, this American MonoRail system handles the steel components from receipt of raw materials, through finishing to shipping. The system boosted production, cut handling labor, improved space utilization, reduced material damage, bettered working conditions, and improved production control.

Let an American MonoRail engineer show you how it can be done in your plant.

THE AMERICAN MONORAIL COMPANY

13111 Athens Avenue • Cleveland 7, Ohio

If you write maker identify as IEN - 12006

ALL INFORMATION, METHODS, AND IDEAS NEEDED TO PRODUCE *BETTER TOOLS AND DIES*

Practical Data on Popular Analyses of Tool Steels, their Selection, Heat Treatment, and Use

In the Revised, Enlarged SIXTEENTH PRINTING of this

TOOL and DIE STEEL HANDBOOK

By Palmer and Luerssen

Here's the BOOK OF ANSWERS for every man responsible for tools and dies. Shows you how to increase your company's production from present equipment—how to reduce toolmaking trial and error, conserve tool steel, avoid die troubles, simplify heat treatment. Gives complete working information on everything from selection of the right steel to heat treating methods and equipment, hardness and toughness testing, latest data on high speed and hot work steels. 564 pages, 355 charts, photos, diagrams give you facts on how design affects heat treatment, hardenability tests, time required to heat different tools to required hardening and drawing temperatures, furnace atmospheres, quenching, tempering, trouble-shooting.

INCLUDING 80-PAGE ALPHABETICAL SELECTOR, BOUND RIGHT IN THE BOOK, SHOWING WHICH STEEL TO USE FOR ALMOST EVERY TOOL AND DIE. Use this book to train new men and upgrade skilled men.

OVER 100,000 COPIES IN USE! CLIP AND MAIL NOW

THE CARPENTER STEEL CO. • READING, PA. • DEPT. BX-2

Please send me, postpaid, your revised "Tool Steel Simplified". I enclose $2.00 ($2.50 outside U.S.A.) in full payment of the book.

NAME_____ TITLE_____

FIRM NAME_____

MAILING ADDRESS_____

CITY_____ STATE_____

(Please print)

If you write maker identify as IEN - 12007

SWITCH . . Arm operated assembly to control work moving on a conveyor

Source: JERVIS B. WEBB CO.
8915 Alpine Ave., Detroit 4, Mich.

For pilot duty

Two switches, each single-acting single-pole double-throw design, with rating at 15 amp. on 110-volt dc., are assembled in the cast aluminum housing of this new switch. The switches are operated in overlapping contact action by a pivoted socket at the rear of the housing. The socket takes an operating arm made of ¼ by ¼-in. square key stock which is supplied by the user in length and shape to meet requirements.

Arm rotation of 10 degrees in either direction opens and closes the contacts. No damage will occur on over-travel to 80 deg. beyond the actuating point. The arm can be set in any one of 72 positions through a complete circle.

If you write maker identify as IEN - 12008

GAGE . . Straight edge rule made of aluminum, 11 lengths to 96 in.

Source: FAIRGATE RULE CO.
175-79 Pacific St., Brooklyn 2, N. Y.

$10 plain
$12.50 beveled

A new length, measuring 96 in., has been added to the company's previously developed line of straight edge aluminum rules. The new unit measures 1¾ in. in width by $\frac{3}{16}$ in. in thickness. It is graduated in one direction along one side and in the opposite direction along the other, one scale being in eighths and the other in sixteenths. Engraved numbers present a clean cut black background on the matte finish aluminum. The rule can be specified with plain or beveled edges.

If you write maker identify as IEN - 12009

CONVEYING . . Motor driven belt operates reversibly at 45 fpm.

Source: HARRY J. FERGUSON CO.
199 West Ave., Jenkintown, Pa.

Assembled to order

New design in the company's Streamliner belt conveyor provides an inclined assembly to operate at a 30-deg. angle between two or more floors for packaged materials. The motor driven belts operate over rollers that can be set high in the original assembly to take overlapping loads or low to provide a protective guard rail on both sides of the belt. Modified designs are available in belt widths to 30 in. with 5½-in. side channels. Guard rails can be specified.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12010

QUICK and EFFICIENT in ACTION

Truscon Steel Boxes and Skids *keep things moving!* They are available in a wide variety of styles and sizes, for truck, crane or hand-operated carrying units.

Truscon Steel Boxes and Skid Platforms are strong at all parts where strength is needed. Units are designed to meet the particular requirements of each individual job. There is practically no maintenance or up-keep required.

Truscon engineers offer to study the handling conditions in your plant and make recommendations without any obligation on your part. This service has been rendered to many manufacturers. Savings have, in many instances, more than offset the original cost of the equipment within a few months. Write for literature.

TRUSCON® STEEL COMPANY • Pressed Steel Division
6700 Truscon Avenue, Cleveland 4, Ohio • Subsidiary of Republic Steel Corporation

If you write maker identify as IEN - 12011

Precision ROD CUTTING at High Speed

with the New DI-ACRO ROD PARTER

DI-ACRO POWER PARTER

The DI-ACRO Rod Parters further increase the applications of "DIE-LESS DUPLICATING" as a cost cutting, time-saving production technique.

Do you require precision?—DI-ACRO Rod Parters hold tolerance to .001" on duplicated cuts. The ends are square, and roundness is maintained.

Do you want speed?—The Rod Parters exceed outputs of other methods with equal accuracy, on rods and bars up to ¾". Torrington Roller bearings incorporated in an exclusive multiple leverage arrangement provide remarkable ease of operation.

DI-ACRO Power Parter has air cylinder cushioned for quiet and efficient operation. Each cutting cycle obtained with 4-way foot valve—leaving operator's hands free.

"PARTS OFF" MANY MATERIALS

All Hot and Cold Rolled Rods • Stainless Steel • Copper Chrome Molybdenum • Brass • Aluminum • Bi-metals Many Types of Plastics • Fibre • Rubber • Wood

GET "DIE-LESS DUPLICATING" CATALOG! Shows parts duplicated by DI-ACRO Benders, Brakes, Shears, Rod Parters, Rollers, Notchers, Punches.

di-acro

318 8th Ave. Lake City, Minn.

O'NEIL-IRWIN

If you write maker identify as IEN - 12012

Cut Polishing Time Improve Surface Quality

with "LINDE" FINE ALUMINA POWDERS

Obtain superior finishes, free from microscopic pits and scratches in a fraction of the usual polishing time. Use less abrasive and use it directly without levigation and other wasteful preparatory steps. They can also be compounded with waxes and used in stick form.

LINDE Fine Alumina Powders are characterized by ultra-fine, uniform particle size, high purity, and swift polishing action. They have gained wide-spread acceptance in polishing materials ranging from metallographic specimens to gemstones and noble metals.

Call or write any LINDE office and we will be glad to discuss your particular polishing applications.

	Type A	Type B
Chemical Composition	Alpha Al_2O_3	Gamma Al_2O_3
Particle Size (approximate)	0.3 Microns	Less than 0.1 Microns
Hardness (Moh's) (Equivalent to crystalline material)	9	8
Crystalline Structure	Hexagonal	Cubic

The term "Linde" is a trade-mark of Union Carbide and Carbon Corporation.

LINDE AIR PRODUCTS COMPANY

A DIVISION OF UNION CARBIDE AND CARBON CORPORATION

30 East 42nd Street, New York 17, N. Y. UCC Offices In Other Principal Cities

In Canada: DOMINION OXYGEN COMPANY, LIMITED, Toronto

If you write maker identify as IEN - 12013

EYE LEVEL CHECK ON BOILER WATER LEVELS

Positive, constant check on boiler water levels is now possible at eye level—right on the instrument panel or other convenient location.

Yarway's Remote Liquid Level Indicator is always accurate because it's operated by the boiler water itself. No stuffing boxes. Indicating mechanism is never under pressure.

Ideal for indicating boiler water level, feed heater water level, superheater pressure differentials and tank levels. For complete description and operating details, write for Bulletin WG-1821.

YARNALL-WARING COMPANY

122 Barnard Avenue, Philadelphia 28, Pa.

YARWAY

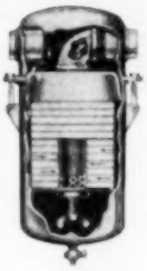
REMOTE LIQUID LEVEL INDICATOR

If you write maker identify as IEN - 12014

STAYNEW

ABSORPTION FILTERS PROVIDE SUPER FILTRATION!

—REMOVE LAST TRACES OF OIL AND MOISTURE FROM COMPRESSED AIR LINES



Many manufacturing processes and certain compressed air operated equipment require the removal of condensed oil and water vapors *completely* from the compressed air. In thousands of installations all over the country, Staynew Absorption Filters remove the last traces of oil and moisture and prevent failure of combustion and other pneumatic controls . . . keep maintenance time and cost at a minimum.

For Complete Information, Write Today For Bulletin B-1A.

Representatives in Principal Cities

MODEL 4APM ABSORPTION FILTER

DOLLINGER STAYNEW FILTERS

DOLLINGER CORPORATION

3 Centre Pk., Rochester 3, N. Y.

ALL TYPES OF FILTERS FOR EVERY INDUSTRIAL NEED

If you write maker identify as IEN - 12015

SIMPLIFY tough PULLING jobs

Pull Rod or Screw Inserted through UNIQUE "CENTER HOLE"

Ram is drawn in a straight, torque-free pull through Ram. Ram is its own back up! Less rigging time — more effective power!

10 to 100 ton capacities.

*"Center-Hole" in Rams of 30-ton and greater capacities.

Simplex Re-Mo-Trol

HYDRAULIC PULLERS
PUMPS AND REMOTE CONTROLLED RAMS

If it can be pulled, Re-Mo-Trol can pull it—easier and faster! Pulls liners, sleeves, shafts, gears, etc. SAFER remote control. Also lifts or presses. Can save its cost on a single tough job!

WRITE FOR BULLETIN: HYDRAULIC 51

Simplex Jacks

TEMPLETON, KENLY & CO.
1012 South Central Avenue • Chicago 44, Illinois

If you write maker identify as IEN - 12016

Mecco SAFETY "WEDGE-GRIP" STEEL TYPE HOLDER

Fast TYPE CHANGE FEATURE

Ideal for use on marking jobs requiring interchangeable type, this unit features a patented Safety Snap for speed and ease in changing type. Made to order in any size, it is made of Mecco Safety Steel to prevent spalling and mushrooming.

Write for literature

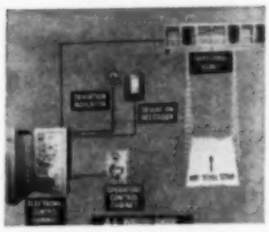
M. E. CUNNINGHAM CO.
SAFETY STEEL STAMPS

1039 Chateau Street • Pittsburgh 33, Pa.

If you write maker identify as IEN - 12017

GAGE . . Electronic instrument for width deviation in hot steel strip

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.



Reads in one second

Two photocells constitute the actuating means for this new electronic gage. They are mounted on a motor driven width-adjusting screw in a detector head for location about 15 ft. above a moving strip of hot steel ranging between 1,350 and 2,050 deg. F. The photocells connect through an electronic control cabinet to a deviation indicator and a recorder, in addition to the operator's control cabinet.

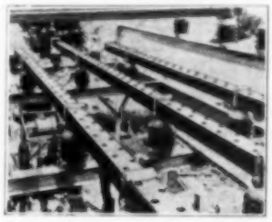
The cabinet contains a three-digit mechanical counter, which indicates the width at which the gage is set, a deviation indicator with the necessary controls and switches to set basic widths and make occasional calibration checks. Strip position can change as much as 3 in. either vertically or horizontally without affecting the gage accuracy which is within ⅛ in. of a given setting between 10 and 96 inches.

Light radiation from the hot strip is picked up by the photocells and converted into electrical signals in the form of two pulsating square waves. These waves are amplified and then added together and balanced against a standard voltage. The difference produces a signal proportional to the width deviation and serves to actuate the indicator and recorder.

If you write maker identify as IEN - 12018

CONDUCTOR . . Square copper bus ventilated to increase capacity

Source: CHASE BRASS & COPPER CO.
236 Frank St., Waterbury 20, Conn.



Less copper more current

Ventilating holes to provide air circulation that will dissipate heat from the internal surfaces characterizes this new square copper tube bus. The ventilation permits carrying an increased load as compared to a similar or larger tube without the holes. Thus a 5 by $\frac{1}{16}$-in. square tube presents a metal area of 3.2 sq. in., weighs 12.42 lb. per foot and has a load rating of 3,720 amperes. This compares with a 6 by $\frac{1}{16}$-in. square tube which, unventilated, has a 4.15 sq. in. area, weighs 16.08 lb. per foot and rates 3,700 amperes.

The tube provides mechanical strength in all directions and is particularly suited for efficient electrical connections in which joints can be made with commercial electrical connectors of the clamp type by bolting plates to the tube walls or by brazing. The tube is available with sides ranging from 2 to 11 in. for ac. loads ranging from 1,310 to 10,600 amp. on a 30-deg. C. temperature rise.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 99

If you write maker identify as IEN - 12019

Rollers available in diameters from 1" to 6½". Lengths as desired. Capacities from 25 lbs. to 16,000 lbs.

ROLLERS FOR MANY PURPOSES

Logan Rollers are designed primarily for use in Roller Conveyor, but are suitable for many other purposes. Examples are machine parts, feed and guide rolls, truck beds, coil boxes, etc. Rollers are tubular type with ball bearings and either round or hexagon shafts. Bearings can be plain, dust protected, grease packed, or pressure lubricated.

Further information on request.

Logan Conveyors

LOGAN CO., 276 CABEL ST., LOUISVILLE, KY.

If you write maker identify as IEN - 12020

New THERMOHM CATALOG Now Available

• Thermohms are L&N electrical resistance thermometers used with Speedomax or Micromax instruments for measuring temperatures to 1000 F.

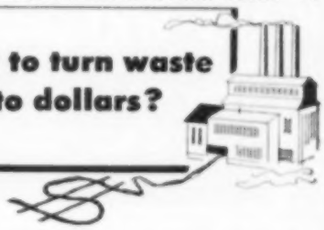
Even at 500 F, the Thermohm-instrument team is 4 or 5 degrees more accurate than the Thermocouple-instrument team, and retains its full sensitivity and accuracy far longer than bulb instruments do. Thermohms are installed in the same general way as the other temperature detectors.

This new 33 page catalog describes the many uses and special features of the Thermohm and gives specifications. It's free on request . . . just write for catalog EN-84, to our nearest office, or to 4905 Stenton Ave., Phila. 44, Penna.

LEEDS & NORTHRUP
instruments automatic controls furnaces

If you write maker identify as IEN - 12021

Want to turn waste into dollars?



In plant after plant, liquid effluent formerly considered worthless waste, is now being converted to valuable by-products through proper treatment. Your Rex Sanitation and Trade Waste Engineer is an expert in such matters and is well qualified to help you turn reclaimable waste into dollars.

He's backed by the complete Rex® Line of Waste Treatment Equipment that is known everywhere as "tops" for reliability, efficient operation and long life. Get more information now! Just mail the coupon.

REX

Chain Belt COMPANY OF MILWAUKEE
4675 W. Greenfield Ave., Milwaukee 1, Wis.

Gentlemen: My industrial trade waste disposal problem is.....

.....

Please send appropriate literature.

Name.....

Company.....*Dept*.....

Address.....

City.....*State*.....

If you write maker identify as IEN - 12022

EVERY STEP A SAFE STEP WITH BLAW-KNOX GRATING

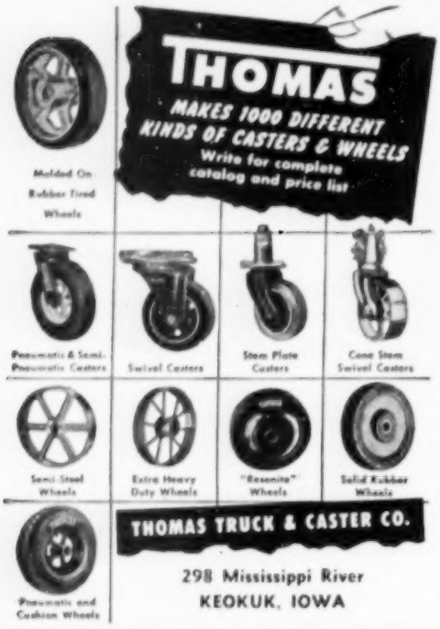
Everyone walks safely, confidently on Blaw-Knox Electroforged Steel Grating . . . the one-piece panels stay rigid and strong—without shimmy or shake—because there are no parts to work loose. Twisted cross bars provide sure footing under the most adverse conditions. For complete information, write for Bulletin 2365.

BLAW-KNOX GRATING
Industry's first choice for
• SAFETY • STRENGTH • LONG LIFE
• LOW UPKEEP • SELF-CLEANING

Grating Department
BLAW-KNOX DIVISION of Blaw-Knox Co.
2050 Farmers Bank Bldg.
Pittsburgh 22, Pa.

BLAW-KNOX ELECTROFORGED STEEL GRATING

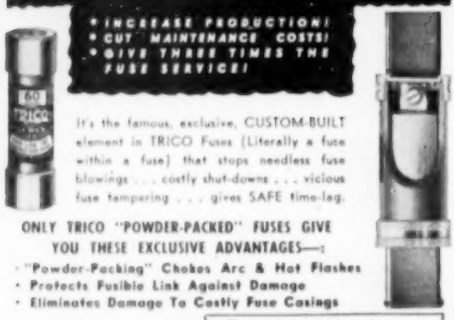
If you write maker identify as IEN - 12023



If you write maker identify as IEN - 12024

HERE'S WHY "Powder Packed" TRICO RENEWABLE FUSES

* INCREASE PRODUCTION!
* CUT MAINTENANCE COSTS!
* GIVE THREE TIMES THE FUSE SERVICE!



It's the famous, exclusive, CUSTOM-BUILT element in TRICO Fuses (Literally a fuse within a fuse) that stops needless fuse blowings . . . costly shut-downs . . . vicious fuse tampering . . . gives SAFE time-lag.

ONLY TRICO "POWDER-PACKED" FUSES GIVE YOU THESE EXCLUSIVE ADVANTAGES—:

- "Powder-Packing" Chokes Arc & Hot Flashes
- Protects Fusible Link Against Damage
- Eliminates Damage To Costly Fuse Casings
- Creates Great Current Savings
- Reduces Fire and Accident Hazards

FREE . . . WRITE FOR BOOKLET 206-A
It's packed with fuse facts and is profusely illustrated.

Speed Up Fuse Replacement with TRICO
FUSE PULLERS
Prevent shock, burns, serious infection, compensation costs. Also handy for adjusting switch and fuse clips.
WRITE FOR BULLETIN No. 5

TRICO FUSE MFG. CO. Milwaukee, Wis.

If you write maker identify as IEN - 12025

DOWNS SAFETY GRABS ...GRIP ANYTHING!

FOR CRANES AND HOISTS...
Material lifting equipment will do more work—faster, easier—when you have the proper "grabs" for every type of load. No matter what your hoists are handling—pipe, rails, drums, plate or structural steel, stone, timber, boxes or odd-shaped objects of any description—there's a DOWNS Safety Grab that will enable you to do it faster, easier *and* safer. Learn new short cuts to greater efficiency for YOUR plant with DOWNS' *complete line* of Safety hoist grabs!

Write for Free Illustrated Catalog 200 Today!

DOWNS CRANE & HOIST CO.
MECHANICAL ENGINEERS
540 W. VERNON AVENUE • LOS ANGELES 37, CALIF.

If you write maker identify as IEN - 12026

WOODWORKING . . Frame and saw to position and cut plywood panels

Source: J. D. WALLACE & CO.
146 S. California Ave., Chicago 12, Ill.

For one man operation

Horizontal rail, made of pipe, is mounted at the top of the structural frame in this new No. 48 Panel Saw. It acts as the track for a hinged arm assembly that is counter balanced to carry a motor driven circular saw. A plywood panel can be positioned on the frame and the saw drawn down over it to make a vertical cut. The operator also can turn the saw through 90 degrees and employ the pipe rail as a track to draw the saw along for a horizontal cut.

The assembly mounts against a wall. It measures 11½ ft. in length by 3½ ft. in depth at the base. The saw has capacity to cut 2¼ in. in depth. The machine will make a 48-in. vertical cut or a 96-in. horizontal cut, either square or bevel.

If you write maker identify as IEN - 12027

FELT . . Chlorophyll impregnated for dress shields, hat bands, shoes

Source: FELTERS CO.
208-12 South St., Boston 11, Mass.

Name use for a free sample

Chloro-Felt trade names a new sheet felt that has been impregnated with chlorophyll to impart a clean smell and to be employed in products where control or minimizing of odor is important. The material has a slight green tint and imparts a faint chlorophyll odor when it is held close to the nose. It is non-toxic and will not stain.

If you write maker identify as IEN - 12028

MAGNET . . Permanent unit to pick up ferrous parts and chips

Source: STANDARD PORTABLE CORD CO.
1939 Gibson St., Jamestown, N. Y.

List is $3.75

The magnet head is mounted in a swivel at the end of a 48-in. handle in this new tool. The magnet can be passed down to the bottom of a tank to pick up ferrous pieces or to clean out chips that have sunk through liquid to the bottom. The magnet also can be inserted into locations difficult of access to retrieve lost pieces. Base is 2⅝ by 2 inches. Overall length is 52 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12029

PRE-TESTED...GUARANTEED...FULL-RATED AIR POWER!

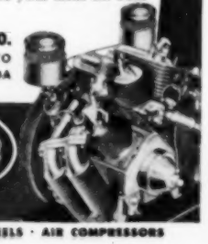
WAYNE
JOB-ENGINEERED COMPRESSORS

You get all you pay for in a Wayne Compressor. Every one is sold on the basis of known efficiency in terms of useable air output—pre-tested and guaranteed. Designed, engineered and built in Wayne plants each compressor is "job-engineered," you are assured of buying guaranteed air output for a specific job.

Wayne Air Compressors are checked for volumetric efficiency, performance and operating tolerances. Inspection standards are high, and units must measure up to rigid requirements. Every working part has been designed for minimum maintenance and low operating cost.

You get every dollar's worth with a Wayne—highest quality, guaranteed air output, nationwide service. Make your next air compressor a Wayne!

THE WAYNE PUMP CO.
SALISBURY • TORONTO
MARYLAND • CANADA



Wayne

INDUSTRIAL LIFTS • HOSE REELS • AIR COMPRESSORS

If you write maker identify as IEN - 12030

Costs CUT IN HALF with new electrical tape

Splice, wrap cables and bus bars with *one* tape instead of *two!* No packs, no wraps or compounds needed under Polyken Polyethylene No. 822. *Application and splicing time cut in half.* No. 822 stretches, conforms to irregular surfaces, resists moisture, acids and corrosion. Dielectric strength 10,000 volts.

Write for free samples and folder, "Tape is a Tool." Polyken, Dept. IEL, 222 West Adams St., Chicago 6, Ill.

ONE OF THE NEW
Polyken ELECTRICAL TAPES
TAILORED TO YOUR JOB
Polyken Industrial Tape, Department of Bauer & Black, Division of The Kendall Company

If you write maker identify as IEN - 12031

MARMAN COUPLINGS

Join Ducting, Tubing and Pipe without Bolted Flanges or Threads!

Marman Couplings assemble fast, hold tight, and seal positively. Strong circumferential pressure from the "V" band locks the flanged ends together. Simple rolled sheet metal or machined flanges can be made integral with, or added to, the duct, tube or pipe to be fastened. Joints can be made with or without gaskets.

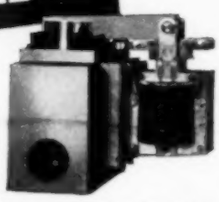
Marman Couplings do away with expensive, heavy, bolted or threaded machine flanges. They are supplied in continuous or segmented design, either solid or ventilated. Tension is applied by T-bolt take-up or the patented Marman Quick Coupler which allows rapid assembly and disassembly. Marman Couplings are made to accommodate a wide range of temperatures, pressures and size requirements.

WRITE DEPT. I-11 for complete information on Marman Couplings

MARMAN PRODUCTS CO., INC.
940 WEST FLORENCE AVENUE
INGLEWOOD, CALIFORNIA

If you write maker identify as IEN - 12032

High Pressure SOLENOID VALVES...



have working pressures range as high as 3000 psi. Specifically designed for remote push button control of hydraulic systems, as well as for the handling of any non-corrosive fluids. Poppet construction eliminates leakage. Impregnated coils are oil and moisture resistant. Unit can be mounted in any position. Available in 110-220 A.C.

Write for our engineering cooperation or illustrated circular C

WATERMAN ENGINEERING Company
725 CUSTER AVENUE
EVANSTON, ILLINOIS

If you write maker identify as IEN - 12033

THIS P-K SCREW CUTS COSTS OF ASSEMBLY UP TO 50%

Forms thread as it's turned in

SKIPS Tapping

AVOIDS Belting Riveting Inserts in Plastics

SAVES Time and Trouble in Millions of Assemblies

P-K TYPE Z Hardened SELF-TAPPING SCREW One of six types for every metal and plastic assembly. For details, write Parker-Kalon, 200 Varick St., New York 14, N. Y.

Call in a P-K Assembly Engineer

See why industry's fastening-wise leaders say —

YOU'RE O.K. WITH P-K — THE ORIGINAL

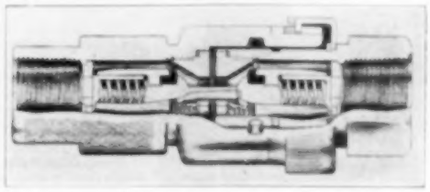
PARKER-KALON SELF-TAPPING SCREWS

AVAILABLE EVERYWHERE THROUGH ACCREDITED DISTRIBUTORS

If you write maker identify as IEN - 12036

HOSE FITTING . . Quick acting coupler with shut off valves, for refrigerant

Source: HENRY VALVE CO.
3213-17 North Ave., Melrose Park, Ill.



List is $8.50 including caps

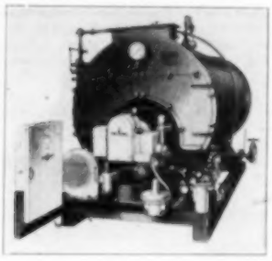
Ammonia or freon refrigerant can be handled safely by this new quick acting coupler. It has been designed particularly for refrigerated trucks, but is suited for plant applications where pnuematic and hydraulic lines must be connected or disconnected quickly and where the open lines must be sealed to prevent loss of fluid or gas.

Piston valves, enclosed in the two halves, open by moving away from their seats when the halves are brought together. A soft molded insert, mechanically held in place, forms a seat in each half of the coupler. Guides assure correct piston alignment. The design permits piston replacement after unscrewing the seat bushings. An O-ring in the socket half provides a positive seal while the coupling is being connected. Protector caps cover the coupler halves when they are disconnected. Standard size is ½ in. at the internally threaded ends of the new fitting.

If you write maker identify as IEN - 12037

BOILER . . Self-contained assemblies of unit boiler and burner equipment

Source: KEWANEE-ROSS CORP.
119-23 Franklin St., Kewanee, Ill.



For connection on the job

The boiler portion of this new assembly, complete with all of its essential elements, is tested, mounted on steel skids and shipped direct by the company to a job site. The boiler is constructed in accordance with ASME and Steel Boiler Institute Codes. It is available for steam and water in sizes ranging from 52 to 304 bhp. and 125 or 150-lb. working pressure. It also can be supplied for 15-lb. steam or 30-lb. water with ratings from 1,808,000 to 8,400,000 btu.

The burner portion, including controls and forced draft air supply, completely assembled, wired and tested is manufactured and shipped by Iron Fireman Mfg. Co. of Cleveland, Ohio. It is ready for connection to the boiler when it also arrives at the job site. Refractories are integrally mounted to minimize field work in placing the combination unit in service. The boiler can be fired with No. 6 or lighter fuel oil, with gas at either high or low pressure or a combination.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12038

RUEMELIN BLAST GENERATORS

A practical low-cost sand blast used by plant engineers for maintenance work. Cleans rust, paint, scale from piping, valves, fittings, renovating buildings, stripping paint from trucks, busses, trailers, railroad cars, structural steel, storage tanks, ship hulls, etc. Can be fitted with Wet Adapting Nozzle for eliminating dust.

Write for Bulletin 36-C

RUEMELIN MFG. CO.
3863 N. Palmer St.
Milwaukee 12, Wis.

Manufacturers and Engineers
SAND BLAST AND DUST COLLECTING EQUIPMENT, WELDING FUME COLLECTORS.

If you write maker identify as IEN - 12039

"WRAP A STRING AROUND IT"

Sta-Warm

CAN HEAT IT FOR YOU

The particular compound, wax or soft metal melting tank you need to exactly meet your own production requirements can be safely, economically and efficiently heated by "The Sta-Warm Method". It's as easy as tying a string around the outside of the tank. For that is just what Sta-Warm does . . . with a specially processed resistance wire that is cemented and baked in place. Many feet of wire and numerous circuits, controlled by variable or fixed thermostats, provide the famous Sta-Warm heat that is so well known and universally accepted in industry today.

Sta-Warm know-how is at your disposal to help you reduce production costs. Why not investigate Sta-Warm's varied line of standard heaters or their special engineering service? Inquire today.

If you can tie a string around it, Sta-Warm can heat it for you.

Sta-Warm ELECTRIC CO.
560 N. CHESTNUT ST., RAVENNA, OHIO

If you write maker identify as IEN - 12040

NEED COPIES?

MODERN MIMEOGRAPHING—New equipment and supplies for the fast production of copies on a wide variety of paper and card stocks. A. B. Dick mimeograph products are for use with all makes of suitable stencil duplicating products.

MODERN OFFSET—A. B. Dick lithograph direct image plates and masters provide for (1) longer runs with sharp definition—(2) easier corrections—(3) more successful filing—(4) marked superiority in resistance to fingerprints.

MODERN SPIRIT DUPLICATING—A. B. Dick CLEEN-SEAL master sets and spirit carbons guard against stains and smudges. Available in a variety of sizes for long, medium and short runs. Five brilliant colors—purple, red, green, blue and black.

Write Dept. IEN 1152 for full information—or call the A. B. Dick Distributor listed in the classified section of the phone book.

A·B·DICK

A. B. Dick Company • 5700 Touhy Avenue • Chicago 31, Illinois

If you write maker identify as IEN - 12041

Protect! Identify!

Personalized Strapping Seals

Now you can have your strapping seals produced in your own colors, with your own name or trademark!

These lithographed seals are an exclusive Signode Service. They give your shipping containers instant identity, prevent separation in multi-unit shipments, speed handling and provide extra protection against theft and pilferage—in addition to their definite advertising and prestige value.

For complete information about *Personalized Strapping Seals,* write

SIGNODE STEEL STRAPPING COMPANY
2611 N. Western Ave., Chicago 47, Ill.

THIS SEAL MEANS SIGNODE SECURITY IN SHIPPING

If you write maker identify as IEN - 12034

Yes, We Can Do It!

We Can Quote on Your Application, Accept Your Order and DELIVER

We are in an enviable position whereby we can deliver the answer to your assembly problem in the form of a particular piece of equipment designed especially for your needs . . . We can do it NOW —not maybe—some time in the future. Though generally speaking, deliveries throughout industry are uncertain, and this situation probably may continue for some time, our position is different . . . We have marshalled our resources and facilities in a way whereby we can positively assure the execution and delivery of your orders without delay.

DETROIT POWER SCREWDRIVERS, HOPPER FEEDING UNITS
NUT DRIVERS, SPECIAL ASSEMBLING MACHINES

Thousands of manufacturers have profited through greatly stepped-up production as a result of our service. You, too, can benefit by the use of D. P. S. power-driven machines. Get further details. Also send sample assembly for production estimate.

DETROIT POWER SCREWDRIVER CO.
2815 W. FORT ST. DETROIT 16, MICH.

If you write maker identify as IEN - 12042

300 Bends Per Hour
with NEW Semi-Automatic
PINES BENDING MACHINE

SAVES TIME, CUTS COSTS ON SHORT RUN, PRODUCTION, MAINTENANCE WORK

SPECIFICATIONS
PINES SERIES 1400 BENDER
- Maximum Capacity—1" O.D. 16 ga. steel tube
- Maximum Radius of Bend—8½" to centerline
- Length of Tube—Up to 5 ft. standard
- Bending Speed—19 R.P.M.
- Working Height—35"
- Overall Size (Floor Space)—5' x 5'
- Frames—1000 P.S.I.
- Pump Motor—1 H.P.
- Pump—7 G.P.M. (Vickers)
- Optional—Adjustable gages provision for any length of tube, needed for critical bends

Fast, Easy to Operate—Forms Smooth, Neat Bends Quickly

Eliminates many slow, tedious hand bending operations. Is especially designed to cut costs on work formerly considered too variable for fully automatic equipment. Fast and easy for one man to operate. Hydraulic bending arm forms smooth, neat-looking bends quickly. Clamp and die rollers (for sliding dies) are operated by hand toggle levers. Hand wheel provides immediate angle-of-bend selection. *Typical production:* 300 bends per hour on 1"-16 gage steel tube.

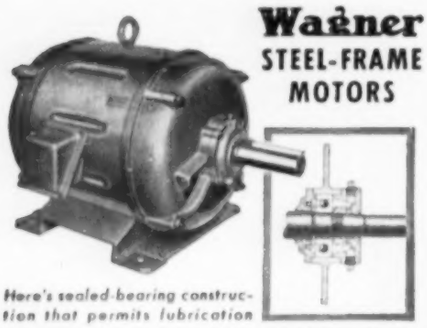
Ask for An Analysis of Your Bending Problem!

Write today for free literature. Find out how a Pines Bender can be applied to your work. Ask for an analysis of your bending problems. There's no obligation.

PINES ENGINEERING CO., INC.
635 WALNUT AURORA, ILLINOIS

If you write maker identify as IEN - 12043

Wagner
STEEL-FRAME MOTORS



Here's sealed-bearing construction that permits lubrication

Wagner Steel-Frame general purpose polyphase motors are equipped with labyrinth sealed-bearing housings that effectively prevent the entrance of any dirt or grit that might cause premature wear. It is not necessary to lubricate the bearings—motors in the smaller frame sizes operate for years without relubrication. But . . . these Wagner Motors are provided with two lubrication openings—you can lubricate your motors when necessary or desirable, to add years of useful motor life in unusually severe applications. Wagner's Bulletin MU-131 gives valuable information concerning proper lubrication of electric motors—Copies will be sent you on request.

M52-17A

Wagner Electric Corporation
6414 PLYMOUTH AVENUE
ST. LOUIS 14, MO.

ELECTRICAL EQUIPMENT AND AUTOMOTIVE BRAKE PRODUCTS

If you write maker identify as IEN - 12044

"We have used your Bin-Dicators in our fertilizer plant for some time and would not be without them. I can show you a case where a single Bin-Dicator replaces a man," writes a New England manufacturer.

BIN-DICATOR

"keeps an eye" on levels of bulk materials in silos, hoppers, bins, chutes and automatically reports to central control point. Prevents over-filling; prevents overfeed and underfeed to conveyors and filling equipment; prevents delays and waste. Low cost, easy to install, simplest operation. Widely used.

BIN-FLO Aerator Units keep dry, finely ground materials moving in bins, hoppers, chutes; prevent packing, bridging.

NEW 1952 CATALOG FREE

THE BIN-DICATOR CO.
13946-B Kercheval · Detroit 15, Mich.

If you write maker identify as IEN - 12045

HEATING . . Petroleum gas torch feeds from replaceable gas cylinder

Source: OTTO BERNZ CO.
278-82 Lyell Ave., Rochester 6, N. Y.

About $7

The company announces new design of its liquefied petroleum gas torch, previously described IEN-7886-50, to provide an assembly known as the Bernz-O-Matic. It includes a replaceable storage cylinder and interchangeable burners for a utility flame as shown in the illustration or a pencil type flame. Flame temperature to 2,300 deg. F. can be reached by adjusting the burner valve. The torch will operate for 15 hr. before a new gas cylinder is required.

The fuel cylinder measures 2⅝ in. in diameter and weight with the burner assembly is 2¾ pounds. Overall length is 10 inches. Replacement cylinders list at about $2. An original unit consists of one loaded cylinder and choice of a utility or pencil type burner to meet the user's requirements.

If you write maker identify as IEN - 12046

FLOORS . . Asphalt base material to fill into broken concrete areas

Source: UNITED LABORATORIES INC.
16803 Euclid Ave., Cleveland 12, Ohio

To make a quick repair

Supersel is a new formulation of the company's Tampatch floor repair material previously described IEN-12345-48. It is composed of prepared aggregates coated with synthetic resins and combined with asphaltic oils. It is packaged in drums of various sizes ready for use after an area to be repaired has been cleaned and coated with a bonding material that is shipped separately. The prepared aggregate is dumped into place and tamped down. The patch becomes smooth with traffic and will stand up under heavy loads.

If you write maker identify as IEN - 12047

WHEELS . . Pressed steel design, rubber tired for loads to 300 pounds

Source: INDUS CORP.
429-33 N. Holmes Ave., Indianapolis 22, Ind.

Color to your order

Sizes range from 6 to 14 in. in this new line of pressed steel rubber tired wheels. The tires can be specified solid, semi-pneumatic or pneumatic with tire load rating to 300 pounds. Ball bearing or oil retaining sleeve bearings are available. Finish is sprayed and baked enamel.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . *See Page 56*

If you write maker identify as IEN - 12048

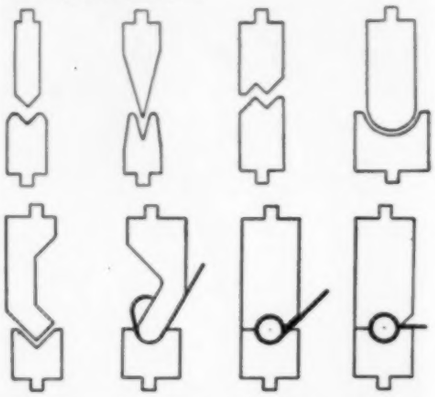
We specialize in Solving Puzzling Set Screw Problems

If you write maker identify as IEN - 12049

PRESS BRAKE FORMING DIES
PROMPT DELIVERY

Any Metal—any gage—to fit any make of machine

Here are a few examples:



RAFTER MACHINE COMPANY, INC.
SINCE 1917
249 Stephens Street **Belleville 9, N. J.**
COLD ROLL FORMING MACHINES AND GANG SLITTERS

If you write maker identify as IEN - 12050

HINGES

Stocker Hinges are precision die-stamped from cold rolled steel.

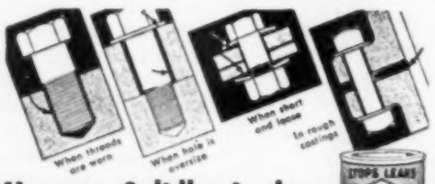
Full acting, 90-degree stop, continuous and butt styles, with or without holes. Plain or plated finishes.

Widely used for metal boxes and cabinets, fluorescent lighting fixtures and all sheet metal products requiring hinges.

Write for complete illustrated catalog of stock items

The **STOCKER HINGE** *Mfg. Co.*
114 North Jefferson St.
Chicago 6, Illinois

If you write maker identify as IEN - 12051



How to Solidly Anchor LOOSE BOLTS

Bolts with worn threads—undersize bolts in oversize holes—bolts passing through thin walls—bolts holding ill-fitting cast flanges — all can be tightened firmly with quick-setting Smooth-On No. 1 Iron Cement. Use it, too, to lock nuts tight, and to cover and protect countersunk bolt heads in metal or wood. These repairs stay tight because Smooth-On expands slightly as it hardens. Buy Smooth-On No. 1 in 7 oz., 1 lb., 5 lb., or 100 lb. size and keep it handy. If your supply house hasn't Smooth-On, write us.

FREE REPAIR HANDBOOK

40 Pages filled with time-saving, money-saving repairs on plant, shop and home equipment made with No. 1 and other Smooth-On Cements. Drop us a line for YOUR free copy.

SMOOTH-ON MFG. CO., Dept. 1
570 Communipaw Ave., Jersey City 4, N. J.

Do it with **SMOOTH-ON**
THE IRON REPAIR CEMENT OF MANY USES

If you write maker identify as IEN - 12052

SEALTITE

flexible, liquid-tight electrical conduit cuts costs

FLEXIBLE—easy to install

LIQUID-TIGHT protection

STRONG—long-lasting

Heavy outer jacket resists steam, chemicals, oil, water, abrasion, etc. Uses standard rigid electric conduit fittings. Available at your electrical supply house. The American Brass Company, American Metal Hose Branch, Waterbury 20, Conn. In Canada: The Canadian Fairbanks-Morse Company, Ltd.

SEALTITE
ELECTRICAL CONDUIT
an Anaconda product

*Trade Mark

If you write maker identify as IEN - 12053

SAVE

TIME
MONEY
MATERIAL
WORK

Chromalox Catalog 50 Shows You

The Chromalox Catalog is filled with valuable data on the use of electric heat to lower costs and increase production in your plant. It shows over 15,000 types and sizes of electric heaters for heating air and other gases, liquids, viscous fluids and solids; for heating dies, molds, platens, moving parts and other equipment. A section is devoted to the new all-metal radiant heaters for baking, curing, drying and other infrared applications. Put Chromalox Electric Heaters to work in your plant.

WRITE FOR YOUR COPY OF CHROMALOX CATALOG 50 TODAY.
Industrial Div., EDWIN L. WIEGAND CO., 7565 Thomas Blvd., Pittsburgh 8, Pa.
See Chromalox Radiant Heaters Advertisement, Page 5

CHROMALOX

ELECTRIC HEAT FOR MODERN INDUSTRY

If you write maker identify as IEN - 12054

NEW The HANDY KNURLER

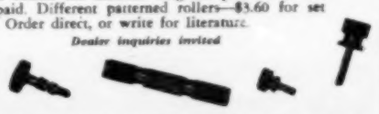
Save set-up time, operations and parts...Use Handy Knurler for individual knurling jobs—also for certain types of production work.

HAND OPERATED LIKE A PAIR OF PLIERS

HANDY KNURLER is used with lathe or drill press. Or hold work in vise and rotate Knurler around it. Concentric and off-center surfaces knurled with precision. Worn and undersized armature shafts, axles, spindles, pins enlarged to permit parts to be re-used. Knurled surfaces may be machined. Deep-Cut grooves retained to hold lubricants.

★ Quality heat-treated steel, blued for rust-protection. No other tool like it. Knurler complete set of 3 knurl rollers for medium diagonal patterns $12.50 postpaid. Different patterned rollers—$3.60 for set of 3. Order direct, or write for literature.

Dealer inquiries invited



M.P.A. CO., 1678 W. 17th PL., LOS ANGELES 6, CALIF.

If you write maker identify as IEN - 12055

WOODWORKING . . Lock mortiser, plane and router, take the same motor

Source: PORTER-CABLE MACHINE CO.
1712-16 N. Salina St., Syracuse 8, N. Y.

To eliminate hand work

The recess for a door lock can be cut by the new Model-513 portable machine, to the left in the illustration, in about 30 seconds from the time the unit is positioned on a door. Then it can be removed and a template employed with the routing machine, shown to the right in the illustration, to cut the recess for the face plate. The driving motor assembly and Cam-Lock chuck hold the tools securely and eliminate the possibility of chatter or kick. Bits and cutters are inserted and secured with a quarter turn of the cam. No wrench is required.

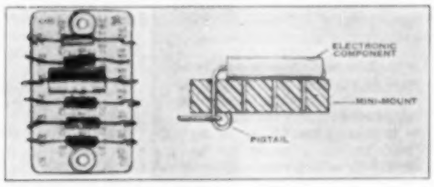
Two routers are included in the line and are known as Models 511 and 514. The standard unit, Model 511, rotates at 22,000 rpm. free and weighs 8¾ pounds. The larger Model 514 operates free at 20,000 rpm. and weighs 18 pounds.

The third machine in the line, shown in the center of the illustration, is a planer capable of taking a 1/16-in. cut at a single pass with cut width maximum at 2 1/16 inches. This machine weighs 21 lb. and is equipped with a fence guard that can be set up for any angular cut to 45 degrees. Weight with the motor is 21 pounds. In all three of the standard machines, the same motor can be employed interchangeably by mounting it in place and plugging in its stub extension cord to a socket on the machine. Then it is ready for use.

If you write maker identify as IEN - 12056

CONNECTOR . . Terminal board assists in assembling electronic parts

Source: MINI-MOUNT CO.
771-75 Driggs Ave., Brooklyn 11, N. Y.



Two types are available

Molded plastic is employed to make a new mounting board that measures 1¼ by 2 by ¼ in. on which to assemble and connect electronic parts such as resistors, condensers. The board carries 36 spaced holes, numbered to assist in layout and servicing. Pigtails on the electric parts are thrust down through these holes for solder connections on the rear face.

The board can be employed to make sub-assemblies for installation into a complete circuit as required. Supports that hold the board above a mounting surface are provided with holes to take No. 5 screws. These supports also permit stacking several of the boards in a tier.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12057

BRADY QUIK-LABEL PIPE MARKERS

FAST... POSITIVE IDENTIFICATION

For a few cents per pipe, you can equip your entire plant with Brady QUIK-LABEL Pipe Markers. You can get a uniform system of pipe identification based on A.S.A. Standard A13. Names of materials printed in large black letters on correct A.S.A. background colors—no hand stenciling, painting, or hard to remember codes. Anyone who can read can tell at a glance the pipe contents and direction of flow. Over 235 different markers and direction arrows in stock. Specials made to order.

Brady QUIK-LABELS stick without moistening—applied in a jiffy. Silicone Plastic treated to resist dirt, grime, moisture—for indoor or outdoor service.

Brady Pipe Markers leave no room for doubt . . . or TRAGEDY.

WRITE FOR Free SAMPLES AND USEFUL CATALOG

DISTRIBUTORS IN OVER 125 PRINCIPAL CITIES

MANUFACTURERS OF SELF-STICKING PRODUCTS
W.H. BRADY COMPANY
734 W. GLENDALE, MILWAUKEE, WIS.

If you write maker identify as IEN - 12058

The high-speed quickly-adjustable Model FA.

SAVE on EVERY package!

Manufacturers are achieving startling economies with today's high-speed packaging machinery.

For example, our Model FA machine wraps up to 100 packages a minute in almost any material you wish to use . . . Only one operator is required . . . Is easily adjusted for different size packages.

In addition to wrapping machines, we can furnish machines for carton-forming, automatic machine bundling, bag-making and filling, and a wide array of specialized machines—over 80 models in all. Get in touch with our nearest office for any desired information.

PACKAGE MACHINERY COMPANY
SPRINGFIELD, MASSACHUSETTS
NEW YORK · CHICAGO · BOSTON · CLEVELAND · ATLANTA · DALLAS · DENVER · LOS ANGELES · SAN FRANCISCO · SEATTLE · VANCOUVER WASH · TORONTO · MEXICO, D.F.

If you write maker identify as IEN - 12059

NEW J.I.C. STARTERS

STOCKED IN NEMA SIZES 1, 2, 3

For machine tool control

New Ward Leonard non-reversing, magnetic, combination starters of the fusible or non-fusible type are designed and built in accordance with J. I. C. standards.

Fusible type starters fulfill N. E. C. requirements for motor branch circuit over-current protection, disconnecting means, motor-running over-current protection and motor controllers.

Non-fusible type starters meet these same requirements with the exception of motor branch circuit protection.

These starters are recommended for use where a magnetic across-the-line starter coupled with disconnect means at starter location is specified and where the control equipment must be protected against oils or coolants.

On special order, multi-motor and reversing starters to J. I. C. standards can be supplied.

Write for J. I. C. Combination Starter Bulletin 4120. WARD LEONARD ELECTRIC CO., 55 South Street, Mount Vernon, N. Y. Offices in principal cities of U. S. and Canada.

WARD LEONARD ELECTRIC CO.
Resistors · Rheostats · Relays · Control Devices Since 1892
RESISTORS · RHEOSTATS · RELAYS · CONTROL DEVICES

If you write maker identify as IEN - 12060

GET THIS FREE FILE on ENGINEERED LAMP MAINTENANCE

ACT NOW and SAVE LIGHT SAVE TIME SAVE MONEY

MAIL THIS COUPON TODAY

It gives you the last word on *group replacement*

In simple, practical terms it tells you

- how to determine your most profitable cleaning cycle
- how to eliminate 85% of your lamp burnouts
- how to cut lamp replacement to a sixth of its former cost

CHAMPION LAMP WORKS
LYNN, MASSACHUSETTS

Please mail your Free File Folder D on planned cleaning and group replacement, at no cost or obligation to:

Name _____ Position _____
Company _____
Street _____
City _____ State _____

If you write maker identify as IEN - 12061

Defense Contracts Call for Hinges? Call on STANLEY...

You just specify the hinge you want—Stanley does the rest, from first sketch to finished product.

Stanley gives you the advantage of expert designers and production engineers—complete research and tool-making facilities—the particular plating and finish best suited to your needs.

As the world's largest producer of hinges, Stanley is geared for efficient production to meet your D. O. deadlines. Write for full information—not only on special hinges, but drawings and stampings as well—now!

PRESSED METAL DIVISION
The Stanley Works New Britain, Conn.
New York • Chicago • Detroit • Seattle
San Francisco • Los Angeles

If you write maker identify as IEN - 12062

KEYNOTES

"Thrifty Angus likes KEY GRAPHITE PASTE... such a little bit goes s-o f-a-r!"

Key Graphite Paste . . . the perfect thread or gasket seal for oil or high-pressure steam lines . . . See how far KEY GRAPHITE PASTE goes . . . send for your FREE sample!

SEALS TIGHT... BREAKS RIGHT!
A Product of KEY COMPANY
7651 McCausland • East St. Louis, Illinois

If you write maker identify as IEN - 12063

No Floor Damage!

WHEN YOU MOUNT YOUR MACHINES ON

UNISORB®

UNISORB - Mounting requires no bolts . . . no lag screws . . . no old-fashioned, destructive floor drilling. A special cement (we supply it) binds the UNISORB pads to machine feet and floor with a holding strength of 1500 p. s. f. *minimum.* What's more, UNISORB absorbs from 60% to 85% of transmitted machine vibration and noise . . . saves floors, buildings, machinery . . . often permits higher machine speed. Today, write for your free copy of "Why It Pays To Anchor Your Machines with UNISORB."

The FELTERS Company
210-I SOUTH STREET
BOSTON 11, MASS.

If you write maker identify as IEN - 12064

TRUCK . . Engine drive fork lift, rides pneumatic tires, rates 1 ton

Source: CLARK EQUIPMENT CO.
Battle Creek 49, Mich.

For general duty

Improved design of the company's Yardlift "20" truck includes the company's new quick change clutch, Elliott type steering axle, mounted in rubber torsional bearings to minimize road shock and at the truck frame center to permit constant wheel contact during travel over uneven ground areas. Smooth tilt action and upright stability are assured by twin double-acting tilt cylinders which replace a single cylinder in the previous design. Piston rods are protected from dirt by rubber boots. The instrument panel at the operator's position mounts the required instruments, ignition switch and starter button.

The truck measures about 73 in. in length, without its forks, and has a 71½-in. outside turning radius. It can be operated in 59-in. intersecting aisles on its 40-in. wheel base. Lowest point of under-clearance is 5 inches.

If you write maker identify as IEN - 12065

CLEANING . . Liquid solvent to clean engine parts by dipping

Source: PENNSYLVANIA REFINING CO.
2684-88 Lisbon Road, Cleveland 4, Ohio

Gumout 'n Basket

New packaging of the company's cleaning solvent, Gumout, previously described IEN-8214-50, includes a 4-gal. pail equipped with a lid and a dipping basket. Pistons, rings, carburetors, fuel pumps, valves, bearings can be cleaned by placing them in the basket and immersing them in the solvent for a short interval.

Projecting handles on the dip basket assist in lowering the work into the container and drawing it out again. Stirring or agitating is not required. It is not necessary to rinse the solvent from the work. It is non-toxic, non-acid, non-caustic and harmless to the worker's hands.

Identify as IEN - 12066

If you could see inside the parking meter, when you insert your nickel, you probably would observe a Sandvik Steel Company Crossecurved spring go into action. This type of spring is stressed before final winding to give it a concave-convex cross-curved structure. Then it is wound against the convex curvature. It tends to resume its original concave-convex shape when it unwinds and thereby provides additional energy. Perhaps you could use such a spring.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12067

Bulletin 600 Manual Starting Switches

- Compact, attractive design
- Available in special enclosures

Bulletin 600 Manual Starting Switches are extensively used for air-conditioning and refrigeration service. Accurate and dependable overload protection for motors of one horsepower or less on a-c, or ½ hp or less on d-c. Thermal overload elements available in a variety of ratings. Meet all N.E.C. requirements. Write for descriptive bulletin. Allen-Bradley Co., 1312 S. Second St., Milwaukee 4, Wis.

ALLEN-BRADLEY
QUALITY
MOTOR CONTROL

If you write maker identify as IEN - 12068

MADE TO STARRETT STANDARDS OF ACCURACY AND PERFORMANCE

WRITE FOR YOUR COPIES

DIAL INDICATOR CATALOG describes and illustrates the complete line with specifications and useful data. Address Department K.

TRANSFER and DIMENSION CHARTS. Full scale details for quick tracing plus complete dimensions of all indicators and contact points.

Starrett
SINCE 1880
WORLD'S GREATEST TOOLMAKERS
THE L. S. STARRETT COMPANY
Athol, Massachusetts, U.S.A.
INDUSTRIAL DISTRIBUTOR

If you write maker identify as IEN - 12069

LIKE AN

ATOM-IC EXPLOSION

Just 1/32" (pinhole size) faucet leak

MUSHROOMS into ATOMIC WASTE

of approximately 95,000 gallons of water yearly—costing:

$24.14

@ $1.90 per M cubic feet

If a hot water faucet, then actual FUEL WASTED heating 95,000 gallons costs approximately:

$88.31 if coal (9879 lbs.)
$91.08 if oil (792 gals.)
$84.41 if gas ($4,411 cu. ft.)

Above figures authenticated by Hackensack Water Co. and American Gas Association.

STOP this needless WASTE during today's MATERIAL and MANPOWER shortages with "SEXAUER" "Easy-Tites" that outwear ordinary faucet washers 6-to-1, thus SAVING labor on 5 REPEAT repairs, PLUS water and fuel, while prolonging the life of SCARCE fixtures.

PAT'D.

"EASY-TITE" Faucet washers

...a modern laboratory triumph, are compounded from du PONT NEOPRENE (tested up to 300°F.) instead of rubber—to withstand DESTRUCTIVE HEAT common in present-day superheating water systems—that formerly broke down washer's structure.

Built like a tire with fabric re-inforcement

they resist the grinding, closing squeeze that SPLIT and MUSH ordinary washers out of shape...causing LEAKS.

Through combining NEOPRENE and FABRIC RE-INFORCEMENT they OUTWEAR ordinary washers 6-to-1 on hot or cold FAUCETS—thus you slash water, fuel and labor costs.

THE NEW "SEXAUER" CATALOG,

Edition G, just out pictures over 2500 TRIPLE-WEAR plumbing REPAIR parts and Pat'd. Precision Tools. It's today's accepted buying guide for discriminating purchasing and maintenance personnel among thousands of top PLANTS, INSTITUTIONS and GOVERNMENT AGENCIES that rely on SEXAUER repair materials. Send for your copy today!

Then too, there's a SEXAUER TECHNICIAN within quick call from coast-to-coast, who offers a special SURVEY service that sets up a schedule of the exact replacement parts required for your particular plumbing fixture regardless of make or age and *without obligation.*

A postcard will bring him and your NEW Catalog promptly.

J. A. SEXAUER MFG. CO., INC., Dept. K-112
2103-05 Third Avenue, New York 51.

as advertised in THE SATURDAY EVENING POST

SEXAUER
WORLD'S LEADING SPECIALISTS IN PLUMBING AND HEATING REPAIR PARTS

If you write maker identify as IEN - 12071

Saves time and money inspecting small dimensions . . .

Nothing else like it! A precision optical measuring instrument for fast, accurate inspection of small dimensions. Save time and money measuring wear on cutting tools, checking forms and dimensions of punches, dies and gauges—as well as radii, angles, chamfers, threads and small holes on production parts.

PRICE $36.00
ORDER TODAY

A product of BELL & HOWELL CO. Distributed by

See your National Tool Co. Representative or Local Jobber

NATIONAL TOOL CO.

Write for FREE descriptive folder

11220 Madison Avenue Cleveland 2, Ohio

If you write maker identify as IEN - 12072

For Unusual Applications, too—

UNIVERSAL METAL HOSE

— adds flexibility, portability and durability!

For example — the Electric-Aire dryers use "UMH" aluminum flexible tubing for easy directional adjustment and application of preheated air in drying plastic casts in fracture cases and in shock treatment.

Perhaps you have a specific problem in conveyance of gases, liquids, semi-solids, dust, granular materials—give us the particulars and we will be glad to make recommendations—no obligation, of course.

Write for Catalog U-101

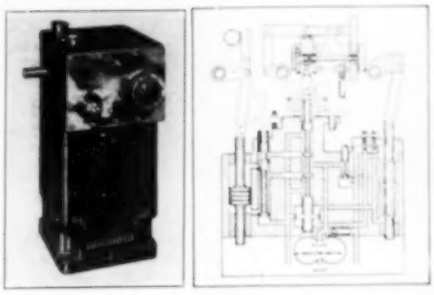
UNIVERSAL METAL HOSE CO.

2131 S. Kedzie Avenue • Chicago 23, Illinois

If you write maker identify as IEN - 12074

CONTROL . . Hydraulic governor, centrifugal type for diesel engines

Source: DALE HYDRAULIC CONTROLS INC.
Pleasant & South, Rockford, Ill.



Adjustments are made at knobs on housing

Drive shaft connects near the top of the finned aluminum housing of this new governor to rotate the centrifugal mechanism. The action is compensated for temperature changes by a bimetal linkage above the flyball spring. The mechanism positions a centrally located pilot valve, depending on engine speed, to admit oil pressure from a built-in pump to one side or the other of the engine-controlled piston on the left-hand side of the assembly.

Oil from the pilot flows through an adjustable auxiliary valve to control speed of the piston action, to limit loading and to provide for engine shutdown by hand, solenoid, or other means. To the right of the pilot valve is a valve, positioned by the centrifugal mechanism, to control operating oil flow. Two adjustable needle valves establish recovery time on accelerating and decelerating. The oil supply for the pump is self-contained. Altitude does not affect the functions.

If you write maker identify as IEN - 12075

GAGE . . Bourdon test unit to check other gages, 5 inch dial

Source: FOXBORO CO.
42 Neponset Ave., Foxboro, Mass.

Ask for Bulletin 424

The company announces new leather carrying case to take two of its bourdon test gages such as the 0 to 100-lb. and the 0 to 1,000-lb. units shown in the illustration. The carrying case is available with new gages or can be ordered separately for similar units now in service.

The gage itself is known as Model-P 6-inch. It is available in a number of ranges from 0 to 30-in. vacuum and from 0 to 10,000-lb. pressure. It is accurate within 0.5 per cent of the total scale range at any point throughout the range. The case is cast aluminum threaded to receive a brass ring. The element is a 270-deg. bourdon spring made of steel or beryllium copper. The movement employs a chromium plated steel pinion, segment and arbor, Monel Metal plates and a stainless steel hair spring.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12076

The Versatile

VIKING Hydraulic SPEED-MILL

For conventional and climb milling

IDEALLY SUITED FOR SECONDARY SCREW MACHINE WORK

- INFINITE VARIABLE SPEED WITH DIAL-CONTROLLED DRIVE
- AUTOMATIC HYDRAULIC CYCLING
- OVERSIZE DESIGN AND CONSTRUCTION
- HEAVY FLYWHEEL DESIGN GIVES SMOOTHER DRIVE, BETTER FINISHES
- ATTACHMENTS FOR VERTICAL MILLING
- QUICK SET-UP, EASY OPERATION

The new improved Viking Speed-Mill, ideal for secondary operation work in screw machine shops, is the answer to many light production milling problems. With the Viking, small, light pieces requiring multiple cuts, good finishes, and close limits can be machined quickly, accurately, and economically. Set-ups are fast, operation is easy, even with relatively unskilled operators. Automatic hydraulic cycling and infinite spindle speed variations assure higher production efficiency and longer cutter life.

BRIEF SPECS: [illegible]

Emergency delivery in less than 30 days. For complete information write—

VIKING Industries

220 MONTAGUE ST. • ROCKFORD, ILLINOIS

If you write maker identify as IEN - 12077

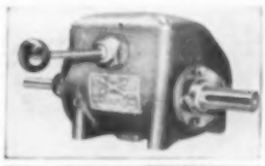
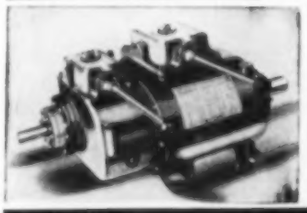


plate or platform mounting

9000-B (1-5 H. P.) 5 H. P. capacity with input speed of 900 r.p.m. **Gear ratios:** 1:1 - 2:1 - 3:1 - 4:1. Special ratios at extra cost.

8100-B (5-10 H. P.) 10 H. P. capacity with input speed of 900 r.p.m. Gear ratios: 1:1 - 2:1 - 3:1 - 4:1. Special ratios at extra cost.



9300 (30 H. P. capacity with input speed of 900 r.p.m.) 8 speed Changes in Geometric Progression of 1.29 (Total reduction of 6:1).

Send for catalog and complete information

up to 50 h. p.

WESTERN TRANSMISSIONS

WESTERN MANUFACTURING CO. • 2555 SCHOOLCRAFT • DETROIT, MICHIGAN

If you write maker identify as IEN - 12078

Isn't it time your business enjoyed these savings, too?

In the printing industry YALE Gas Trucks cut costs... save time and man hours by speedily lifting, moving and stacking tons of heavy paper...in and out of storage areas; to and from giant presses...in and out of receiving and delivery facilities. Fill out coupon below to learn how *your* industry can achieve similar savings.

Savings up to 75%...

...in materials handling costs are important savings for *any* industry! And, *any* industry can realize these savings by using YALE Gas Trucks. You save, too, on maintenance ...because YALE Gas Trucks are built to stand up under the hardest 'round-the-clock service. Get the full story of YALE's cost-cutting advantages and how they apply to your business. Contact your YALE representative...he is fully qualified to recommend and demonstrate the equipment that will do the best job for you...most efficiently...at lowest cost.

YALE

YALE is a registered trade mark of The Yale & Towne Mfg. Co.

MAIL THIS COUPON TODAY

The YALE & TOWNE Mfg. Co., Dept. 3611
Roosevelt Blvd. & Haldeman Ave., Philadelphia 15, Pa.

How can YALE Gas Trucks do more—save money—for me?

☐ Please have your local representative call
☐ Please send my free copy of THE PICTURE STORY OF YALE MATERIALS HANDLING EQUIPMENT

Company _____
Name _____ Title _____
Street _____ City _____ State _____

In Canada write: The Yale & Towne Manufacturing Company Box 237—Postal Station "A"—Toronto

GAS AND ELECTRIC INDUSTRIAL TRUCKS • WORKSAVERS HAND TRUCKS • HAND AND ELECTRIC HOISTS • PUL-LIFTS

If you write make identify as IEN - 12080

Rolling Steel Doors

Manually • Mechanically • Power Operated

No other type of door offers as many desirable features as a good Rolling Steel Door . . . open or closed, they occupy no usable space inside or outside the opening. All-metal construction assures permanence and a lifetime of continuous trouble-free service. Push-button controlled vertical roll-up action provides the quick, timesaving door operation demanded today by all industrial and commercial concerns. When you buy Mahon Rolling Steel Doors you get the latest developments in doors of this type—comparison will convince you. See Sweet's File for complete information, or write for Catalog No. G-52.

THE R. C. MAHON COMPANY
Detroit 34, Michigan • Representatives in All Principal Cities

MAHON

If you write make identify as IEN - 12081

Tailor-Made Conveyor Systems

Increase Your Productivity While Lowering Costs With Webb Conveyors . . . Engineered To Meet Every Conceivable Mechanized Conveying Need.

Chassis Assembly Conveyor with continuous high tee-bars.

Typical of the versatility of Webb Conveying Systems are the chassis assembly conveyors in operation at one of the largest and most mechanized automobile plants in Detroit. For 25 years Webb has materially aided this manufacturer in maintaining production schedules and cost controls with installations such as these chassis assembly conveyors, which permit uninterrupted assembly to the chassis of rear axle, wheels, motor, gas tank and transmission.

Put to better use your Overhead, Floor or Underfloor Space . . . Let Webb Engineers Solve the Challenges Presented by your Most Complicated Materials Handling Problems.

Head End Section of Chassis Assembly Conveyor (notched tee-bar type).

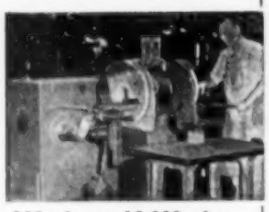
CONVEYOR ENGINEERS AND MANUFACTURERS
JERVIS B. WEBB COMPANY
8015 ALPINE AVE DETROIT 4, MICH. OFFICES IN PRINCIPAL CITIES
FACTORIES IN DETROIT . . . LOS ANGELES . . . HAMILTON, ONT.

If you write make identify as IEN - 12082

STOP DUST

INSTANTLY with **DUSTKOP**

DUSTKOP 1400 cfm.



DUSTKOP 3600 cfm.

300 cfm to 10,000 cfm per unit (22 models)

Standard pre-tested, available from stock. Ask for catalog 605-2. Describe dust problem for recommendation by return mail. No obligation.

AGET-DETROIT CO.
401 Main Street
ANN ARBOR, MICH.

If you write make identify as IEN - 12083

HEATING . . Spreader type stoker with rotors to throw coal in fire box

Source: DETROIT STOKER CO.
5-125 General Motors Bldg., Detroit 2, Mich.

For smokeless action

Fines burn in the air, heavier chunks fall to the grate when this new spreader type stoker is in action. The grate is divided into transfer sections, about a foot in width, with succeeding sections that overlap, coming toward the front. Alternate sections are fixed. The others reciprocate slowly. The action gradually pushes the ash to the front of the stoker where it falls in the pit. It also keeps the fuel bed compact, yet stirred and porous so the air can get through.

Air comes through multiple small holes in the grate section in an action that combines with the furnace turbulence and over-fire air to prevent smoke at low loads. Also it makes the stoker continuously self-cleaning. The unit is suited for small to medium boilers with steam generating capacity to 75,000 lb. per hour.

If you write make identify as IEN - 12084

PUMP . . Condensate return unit rates 12 gpm. at 20 lb. and 180 deg. F.

Source: WALTER H. EAGAN CO.
2334-38 Fairmount Ave., Philadelphia 30, Pa.

The Eagan "Eagle"

Motor driven bronze centrifugal pump and an 18½-gal. steel receiver with a float operated switch are assembled on a common base to make up this new condensate return pump. The pump is equipped with flexible connectors on both the suction and discharge sides to isolate it from the piping to minimize noise and compensate for misalignment. The motor is a ¼-hp. capacitor type unit for operation on 110-volt single-phase ac. Overall dimensions are 18 by 26 by 16 inches. Inlet return connection is threaded for 2-in. pipe. Discharge connector from the pump is ⅝ in. bore.

Identify as IEN - 12085

American Anode Division of B. F. Goodrich Company in Akron has acquired exclusive rights to use and license the use of the Anolith transfer process by which inked impressions can be transferred from paper to rubber. One or several colors can be handled in one quick operation. A short cure sets the impression permanently.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write make identify as IEN - 12086

9800 American industrial leaders depend on Kroil when a frozen bearing, bushing or bolt threatens production or starts to cost expensive man hours.

During eleven years they have learned that it pays to use Kroil first and save parts. In these days of critical materials, shops cannot afford to use hammer-and-chisel methods when stuck-together parts cause trouble.

What Users Say:

"Five men using levers and sledges worked for an hour with a frozen shaft . . . one man used Kroil and lifted the shaft out with no leverage." . . . "Before trying Kroil we broke off every nut (on our heat treat quench trolleys) . . . since then we have not lost one and have decreased the repairing time from 30 minutes to about six minutes per trolley."

Try Kroil at our risk. Send for a gallon—use it under the worst conditions you have. Return it for full credit if not satisfied. Kroil, $3.50 a gallon; Kroiler, $1.50 each . . . together, $4.75. f. o. b. Nashville.

KANO LABORATORIES
1071 Thompson Lane Nashville 11, Tenn.

If you write make identify as IEN - 12087

CESCO *RIGHT... before your Eyes!*

CESCO's exclusive Comfort-Bridge Spectacles and Goggles offer—Broad-bearing nose rests... Selective bridge and eye sizes . . . Balanced weight distribution . . . Sturdy construction . . . Attractive appearance. There is a size and type for every face and every job. They are comfortable to wear. They provide real eye protection. They're *right before your eyes.* **Send TODAY** *for CESCO literature and the name of your CESCO safety equipment distributor*

CHICAGO EYE SHIELD COMPANY • 2336 Warren Blvd. • Chicago 12, Ill.

CESCO FOR SAFETY

OFFICES IN: Atlanta, Birmingham, Boston, Buffalo, Cincinnati, Cleveland, Columbus, Detroit, East Orange, Houston, Kansas City, Knoxville, Little Rock, Los Angeles, Mexico City, D. F., Milwaukee, Montreal, Philadelphia, Pittsburgh, Salt Lake City, San Francisco, Spokane, St. Louis, St. Paul, Toledo, Tulsa

If you write make identify as IEN - 12088

FOR MATERIAL HANDLING—

more and more—the swing is to wide-base pneumatic tires

GENERAL

INDUSTRIAL PNEUMATIC TIRES

More Designers are specifying wide-base General Pneumatics. They know Generals add these extra selling points to handling equipment.

SAVE TIME • MONEY • LABOR

- MORE LOAD CAPACITY AT LOW OR HIGH SPEEDS
- CUSHION EQUIPMENT AND LOADS REDUCING BREAKAGE AND SPILLAGE
- SAVE HIGH COST FLOORS AND FLOOR SURFACES
- SLOW, EVEN WEAR FOR LONG SERVICE
- HIGH FLOTATION FOR EASIER ROLLING OVER SOFT GROUND
- ROLLS EASIER, SMOOTHER OVER ALL SURFACES

Available separately or in assemblies of Tires, Tubes and Wheels. Size O.D. 8" to 27"—200 to 4000 lbs. cap. for low or high speeds.

THE GENERAL TIRE

Rigid **CASTER FORKS** *Swivel*

Wide-base caster forks engineered to carry heavier loads without adding dead weight to equipment. Available in identical pairs in a wide range of sizes.

SEND FOR CATALOG . . . DEPT. G

THE GENERAL TIRE & RUBBER CO. AKRON, O.

If you write maker identify as IEN - 12090

—with the new **HEXACON**

FEATHERWEIGHT
MODEL 30H

So light its weight is hardly noticeable, but more powerful than its wattage rating indicates. Hatchet design makes it more comfortable and practical to use than a soldering pencil. No transformer required. Write for complete catalog.

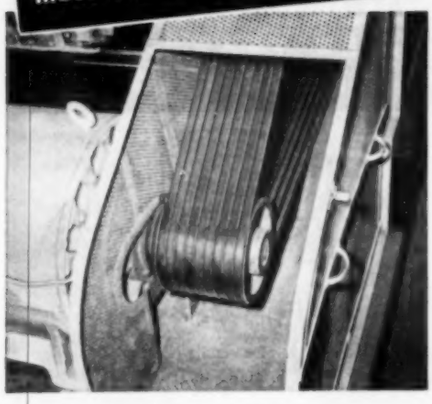
WEIGHT — 5½ OUNCES (LESS CORD); WATTS — 40 OR 60; TIP DIA. — BOTH ⅛" AND ¼" TIPS FURNISHED WITH EACH IRON; PRICE — **$5.50**

HEXACON ELECTRIC CO.
155 WEST CLAY AVE.
ROSELLE PARK, N. J.

HEXACON

If you write maker identify as IEN - 12091

Better rubber products are made with Du Pont NEOPRENE



Neoprene V-belts resist heat, oil, constant flexing . . . have long service life

Whipping through sheaves at high speed—often exposed to heat and lubricating oil—a V-belt has to be able to take it from the first day of installation. V-belts made with cover and core of neoprene are built for this kind of service . . . service where operating conditions are most severe.

Flexible and tough, neoprene V-belts resist high temperatures that soften and weaken ordinary belts. They withstand flexing and abrasion from sheaves through countless revolutions. Even lubricating oils and grease have little deteriorating effect.

In V-belts, as in thousands of other resilient products, the remarkable properties of Du Pont neoprene add durability and improve performance. While Du Pont makes no finished products of neoprene, your manufacturer or distributor will gladly tell you about the neoprene products he supplies.

FREE! THE NEOPRENE NOTEBOOK

Full of interesting stories. New, unusual applications of neoprene to build new products . . . improve old products . . . reduce maintenance costs. Write today for your free subscription. E. I. du Pont de Nemours & Co. (Inc.), Rubber Chemicals Division D-11, Wilmington 98, Delaware.

NEOPRENE
The rubber made by Du Pont since 1932

DU PONT

150th Anniversary
BETTER THINGS FOR BETTER LIVING . . . through Chemistry

If you write maker identify as IEN - 12093

BRAZING . . Liquid flux feeders for assembly in gas line to torch

Source: GASFLUX CO.
196-200 Wayne St., Mansfield, Ohio

Applies with city gas

Model SFH, to the left in the illustration, and Model RE, to the right, are new feeder assemblies in the company's Gasfluxer line, previously described IEN-7274-37. The larger unit mounts a 5-gal. reserve tank for the liquid flux. The smaller one has 1-gal. capacity. Both feed the liquid through a three-valve bypass to regulate the amount delivered. The large assembly is equipped with a 1,000-watt electric heater to off-set the refrigerating action of the fuel gas that bubbles through the liquid and to keep the liquid at correct operating temperature, about 100 deg. F. Thermostats are included for temperature control.

The liquid is fed from the top chamber to the lower one where it is picked up by the gas that enters through a valve and passes out with the gas to one or more brazing torches on a connecting pipe line. It is expelled with the flame through the torch tip to creep ahead of and under the brazing puddle. It penetrates and prepares the metal surfaces. The resulting joint is free from foreign substances so pickling is not necessary and very little grinding will complete a brazing job.

If you write maker identify as IEN - 12094

DRILLING . . Metal disintegrator cuts odd shaped holes in any metal

Source: ELOX CORP.
722-26 N. Rochester Road, Clawson, Mich.

Does not rotate

Electron Drill Type M-300 is a new assembly in the company's line of metal disintegrating equipment, previously described IEN-10887-51. The new machine will cut holes as small as 0.03 in. in diameter in any metal from magnesium to hard steel or carbide. It can be fitted with interchangeable electrodes to cut holes that are square, hexagon, crescent or any other section. Electrode cost is about 3 cents per inch. One inch of electrode will normally drill 1 in. of tool steel.

The machine employs a hollow copper alloy electrode in its spindle above the work table to carry both current and water to the work. Current flow actuates a solenoid in the machine head to reciprocate the electrode through a small amplitude and cause sparking action between its end and the work. The result is disintegration of the metal under the electrode and some disintegration of the electrode itself. The tiny particles are carried away in the flow of cooling water. The machine is similar to that of a radial drill to permit adjusting the spindle position at desired locations on work secured on the table.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12095

Drill More Holes Per Hour In ANY Pattern . . . On ANY Drill Press

with a *Adjustable* **MULTI-DRILL**

DRILLS 2 to 8 HOLES at ONE STROKE

Increase production up to 800% . . . save time, cut costs. MULTI-DRILLS make *any* drill press produce *more*. Attached without alterations or special tools. Quick, easy setups of universally adjustable spindles give you more flexibility . . . wider application. Handles any hole pattern within 9" circle; centers close as ½". Extension Spindles available to increase working area to 22½". Special adaptations available.

model 900

DRILLS ANY HOLE PATTERN

See us at Booths 485, 486, 487, National Power Show, New York

COMMANDER MFG. CO.
4219 W. Kinzie St. • Chicago 24, Illinois

Product of *Commander* . . . Builder of Production Tools

If you write maker identify as IEN - 12096

SQUARE D CONTROL for SMALL SPOT WELDERS

Class 8992—Type BBG-1 NEMA 1A Weld Timer and size IW Welder Contactor in one enclosure.

Class 8991—Type TBS-6 NEMA 1A Safeset Weld Timer.

● Consistent performance and ease of servicing make the Type BBG-1 combination or individual Type TBS-6 timer and suitable contactor the most efficient control for foot or motor-operated spot welders, 30 KVA and smaller.

Write for Small Spot Welder Control Bulletin, Square D Company, 4041 N. Richards St., Milwaukee 12.

SQUARE D COMPANY

If you write maker identify as IEN - 12097

NEW MASKING METHOD

for SPRAY PAINTING • PLATING • SAND BLASTING

PRE-CUT SELF-STICKING **QUIK-MASKS**

Hundreds of plants now using Brady QUIK-MASKS are saving time and money **by completely eliminating** costly hand work, use of stop-off materials and metal shields. QUIK-MASKS are **pre-cut to the exact size and shape you need.** Protect name plates, machined parts, plated and polished sections, holes, threads, etc., from paint, plating and cleaning solutions, oils, acids and sand blasting.

QUIK-MASKS are pre-cut from special "SCOTCH" brand plating and masking tapes. They stick without moistening—are quickly applied and removed. Circles, squares, rectangles, hexagons, letters and numerals stocked in many sizes. Nameplates and other specials made to your exact requirements.

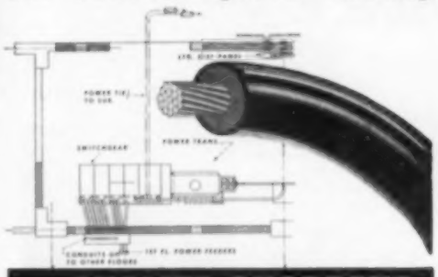
FREE SAMPLES

DISTRIBUTORS IN OVER 125 PRINCIPAL CITIES

MANUFACTURERS OF SELF STICKING PRODUCTS
W. H. BRADY COMPANY
796 W. Glendale, Milwaukee, Wis.

If you write maker identify as IEN - 12098

for over-all plant wiring



...OKOLITE-OKOPRENE

Keep your electrical circuits *strong*, free from weak spots which may disrupt production. For primary distribution cables, and *throughout* your plant circuits, specify Okolite-Okoprene wires and cables. Here's why:

Okolite Insulation stands up under heavy power loads, continuous use year after year.

Okoprene Sheath protects against abrasion, moisture, heat, oils and acids.

Insulation and sheath are applied by Okonite's strip process and vulcanized in a metal mold, giving greater stability and longer life to both. Write today for Bulletin 1k-1950 to The Okonite Company, Passaic, N. J.

The best cable is your best policy

OKONITE *insulated wires and cables*

If you write maker identify as IEN - 12099

NEW IMPROVED HAND SCRAPERS

with just the correct spring

and other features never before incorporated in any hand scraper

This new Hand Scraper, Model No. 5, is the most improved tool of its kind ever produced. Light in weight, easier to use with palm fitting comfort grip, faster cutting. Rubber handle swivel pad, at small extra cost, for those who place scraper handle against body for extra leverage. Three sizes: 18"—20"—22" long. Furnished with high speed steel or Carboloy Blades. Cost less than home made scrapers.

Write for Bulletin No. 11-15

Anderson Bros. Mfg. Co.

ANDERSON BROS. MFG. CO., ROCKFORD, ILL.

If you write maker identify as IEN - 12100

A GRINDING AND POLISHING UNIT!

As shown here, the 6-72 Vonnegut Abrasive Belt Unit is set up as a *lathe attachment* for cylindrical grinding and polishing. The same basic unit can be used as a *floor stand* and also as a *swing machine*. But that's not all—it has proved its value as a grinding and polishing unit for special machines, and as an attachment for other machines. There is the possibility that it can be used for an entirely new application in *your* plant. If you find that possibility, write us about it—we'll be glad to help you work out the details. Send for Bulletin No. 62.

Grinding and Polishing Machinery Corp.

SUCCESSORS TO VONNEGUT MOULDER CORPORATION

1827 MADISON AVE., INDIANAPOLIS 25, U.S.A.

If you write maker identify as IEN - 12101

Now Spray On design layout ink

"JUST PRESS THE BUTTON ON THE CAN"

Faster! Easier!

No brush, no waste, no mess! Self-pressurized can sprays on CROWN Design Layout Ink in fine mist that dries to hard surface in a minute. Dark blue is standard—other colors on volume purchases.

ORDER TODAY!

$1.59 PER 12-OZ. CAN

15% discount in cases of 12

Additional discount for large quantities

FOB Sycamore, Illinois

CROWN INDUSTRIAL PRODUCTS CO.
402 Borden Ave., Sycamore, Ill.

Please ship at once
_____ (how many?) cans
_____ (how many?) cases
CROWN Design Layout Ink

Name _____
Company _____
Our Purchase Order No. _____
Address _____
City _____ Zone _____ State _____

If you write maker identify as IEN - 12102

PUMP . . Hand operated rotary, self-priming, for liquid dispensing

Source: ENGINEERED EQUIPMENT CO.
P. O. Box 207-E, Warsaw, Ind.

List is $12.50

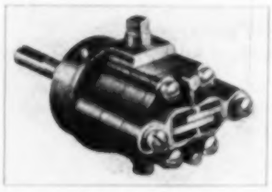
Coolants, inks, oils, syrups can be filled into barrels or drums or dispensed from them by application of this new Model-101 hand operated pump. It is fitted with a combination 1½ and 2-in. bung nut and a ⅝-in. suction pipe. Its spout is threaded for ¾-in. hose and can be turned upward to receive solvents for back flushing.

The pump is built with a steel body and bronze vanes. It weighs 8 lb., provides continuous non-drip flow. The action is reversible.

If you write maker identify as IEN - 12103

PUMP . . Rotary gear design, ¼ to 2 gpm., pressure to 200 pounds

Source: WEBSTER ELECTRIC CO.
1902 Clark St., Racine, Wis.



Ask for Bulletin LAP

Type LAP for face or wet sump assembly and Type LAS, which adds a shaft seal, are now available for use in operations such as pressure lubricating, oil circulating, oil filtering, elevator operation, oil transfer. The new line is custom assembled to meet specified requirements. It is based upon the company's experience over a period of years in manufacture of rotary gear pumps for oil burner service. Helical gears provide quiet operation. An internal relief valve can be specified. Port locations and sizes can be altered from standard for quantity orders.

If you write maker identify as IEN - 12104

ELECTRONIC TUBES . . Industrial uses are described in revised 364-page textbook

McGraw-Hill Book Co.
330 W. 42nd St., New York 36, N. Y.

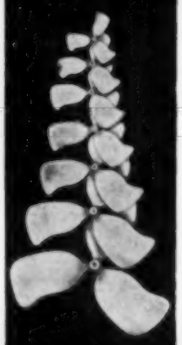
"Electron Tubes in Industry", list price $6, has been almost completely rewritten for its new Third Edition. The book describes operation of components, tubes and circuits applied to industrial control, electronic heating, motor control, counting, sorting, grading. It is intended to provide you with sufficient fundamentals to understand what can be expected of electronic devices, what their limitations are, and to visualize new applications. Theory is held to a minimum.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12105

Kloppenborg (one piece) Cast Aluminum

EXHAUST and CIRCULATING FAN BLADES



INDUSTRIAL USE

Where air is to be moved — Kloppenborg one-piece high grade cast aluminum alloy fan blades are proving exceptionally efficient. Kloppenborg Fan Blades are purchased by many of America's leading industrial plants.

EIGHT SIZES

Kloppenborg Fan Blades are made in 8 sizes—from 12" to 36"—and are rated at 1750 RPM to deliver approximately from 1255 to 14,900 CFM. They are bored to most shaft specifications and are carefully balanced. YOUR maintenance men can install them easily.

Send today for a catalog on blades and all other parts needed for fans.

KLOPPENBORG ALUMINUM FOUNDRY
Established 1938
DAVENPORT 5, IOWA

If you write maker identify as IEN - 12106

It's for You!

HOW TO
★ *Save Time*
★ *Save Floor Space*
★ *Reduce Handling Costs*

all in this FREE BULLETIN

On-the-job photos demonstrate the many advantages of the Nutting Jack and Skid System. It is easy and inexpensive to install—and it is so flexible to varying plant layouts that there is scarcely a materials handling problem to which it cannot be profitably applied.

SEND FOR YOUR COPY OF BULLETIN 48-JS NOW

SINCE 1891 Nutting TRUCK AND CASTER CO.
2013 DIVISION ST., W., FARIBAULT, MINN.

If you write maker identify as IEN - 12107

CAPCO DOCK COVERS OFFER YEAR 'ROUND PROTECTION

Can be installed inside or outside of dock door . . . models for various purposes.

SOLD AT A LOW COST

...and the cost is especially low because it pays for itself many times...saves time and money over many years.

- PREVENTS ACCIDENTS
- ONE MAN CAN OPERATE
- FIREPROOF
- WATERPROOF
- DURABLE — LONG LIFE
- DEPENDABLE

BEAT THE BAD WEATHER

CAPCO Dock Covers completely enclose the space between car and building doorways, protecting loading and unloading during bad weather. Recommended by safety engineers. No more wet merchandise in the rain . . . no more interruption during winter. Here's your insurance against loss of either heat or refrigeration; you have practically the same as indoor loading.

CAPCO

Be sure to write for illustrated literature and prices

622-24 PROSPECT AVENUE • KANSAS CITY 1, MISSOURI

If you write maker identify as IEN - 12109

ONE OF AMERICA'S BROADEST LINES OF HORIZONTAL ALL-PURPOSE PUMPS

ILLUSTRATED 2, 3, 5 HP ELECTRIC DRIVE

PEERLESS TYPE PE & TYPE PS PUMPS

PEERLESS PUMPS

Close-coupled & flexible-coupled pumps ¼ to 150 hp—up to 5500 gpm

Write today for Peerless Bulletin No. B-2300. Illustrated with views of all pumps in the Feerless Fluidyne line. Includes sectional drawings, elevations, dimentional data and head-capacity characteristics. You can buy and apply right from this bulletin.

OTHER PEERLESS TYPES:
Fractional hp close-coupled
Integral hp flexible-coupled or V-belt drive

PEERLESS PUMP DIVISION
FOOD MACHINERY AND CHEMICAL CORPORATION
Los Angeles 31, California and Indianapolis 8, Indiana
Offices: New York, Chicago, St. Louis, Atlanta; Dallas, Plainview and Lubbock, Texas, Fresno, Los Angeles; Phoenix; Albuquerque, N. M.; Tulsa

If you write maker identify as IEN - 12110

LEIMAN AIR PUMPS GIVE YOU Greater Capacity!

SMALLER PISTONS provide LARGER AIR SPACE

HINGED WINGS take up their own wear

Compare this cross-section of a Leiman Air Pump with any other rotary air pump. It is the working air space that counts—and Leiman provides 2 to 3 times more area, per size and weight of pump.

Handle air pressure, vacuum or suction jobs with much smaller Leiman Rotary Air Pumps. You save weight and space—run at lower r.p.m.—have fewer moving parts—no springs, gaskets or packing—no tips to renew—nothing to give trouble. Leiman patented leak-proof hinged wings maintain fully-rated pressure or vacuum for years and years.

What is your air application?

Send us details. Leiman engineers offer over 60 years' experience with thousands of air applications.

Catalog and Application Data sent on request

For Pumps—write DEPT. A

LEIMAN Rotary AIR PUMPS (Pressure—Vacuum)

Metal Cleaning and Finishing without acids or scratch brushes

Fast, low-cost, safe, uniform!

LEIMAN SANDBLASTS

Clean up scaly, rusty, rough surfaces—prepare better surface for plating, enameling or painting—stencil letters and designs—more rapid matte or satin finishes. Use unskilled help. Many models, treadle or automatic.

For Sandblasts—write DEPT. B

LEIMAN BROS., Inc. 166 Christie Street Newark 5, N. J.

AIR PUMPS · AIR MOTORS · SAND BLASTS · DUST COLLECTORS

If you write maker identify as IEN - 12112

COMMUNICATING . . Two way radio for local use in industrial areas

Source: MOTOROLA INC.
4543-47 W. Augusta Blvd., Chicago 51, Ill.

Mounts on desk

Illustrated is a new 450 mc. desk top base station to be employed as a companion unit to the mobile radio equipment, previously described IEN-8843-52. It is designed for use in the 450 to 400-mc. range as well as in the 460 to 470-mc. range where channel crowding is not a problem.

Assembly includes the company's Sensicon receiver with its Permakay filter for selectivity under all conditions of temperature, humidity and vibration. The transmitter contains the instantaneous deviation control circuit patented by the company. A coaxial line filter minimizes spurious and harmonic radiations.

If you write maker identify as IEN - 12113

FOUNDRIES . . Shell mold equipment available for license use and rental

Source: POWDERED METAL PRODUCTS CORP.
9333-37 W. Belmont St., Franklin Park, Ill.

Initial price about $5,000

The company announces availability of a new machine in which shell molds are formed and of a process in which this machine is employed to produce the molds ready to pour from dies measuring a maximum of 12 by 18 inches. The machine is capable of turning out 20 shells per hour from a single set of dies. The company is prepared to supply and install the equipment, at an initial cost of about $5,000, for operation on a use basis at about 6 cents per cycle. It will service the machine, instruct operators and, where required, will build dies and supply the necessary sand resin mix.

The equipment requires a floor area of about 6 by 12 ft. for the machine and about 150 sq. ft. of floor space for a complete shell molding set-up exclusive of pouring. Services that are required include 220-volt ac. power and compressed air.

If you write maker identify as IEN - 12114

TRUCK . . Caster mounted box for utility use, load to 350 pounds

Source: KALASTEEL PRODUCTS CO.
340 Parsons St., Kalamazoo, Mich.

About $8

Tote-A-Way is a new taper sided rectangular box, measuring 18 by 14 by 17 in., with swivel caster mounting. The casters are fitted with ball bearing composition wheels measuring 3 in. in diameter. A hole is provided in the base at each end to apply a hook rod. Finish is lt. green enamel. Weight is about 17 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12115

BE PREPARED COMPLETELY!

McDonald FOLDING STRETCHER OUTFIT

Specially designed for loggers or workers in remote areas

Injured workers need complete emergency care. Be sure you can give safe stretcher transportation—first aid attention! McDonald Outfit includes stretcher, splints, rubber and wool blankets, roll-up first aid kit, snake bite kit in handy, weather-proof duffel case. Fully approved.

WRITE FOR INFORMATION

1932-1952 20 YEARS OF PROGRESS

B. F. McDONALD CO.
Manufacturers & Distributors of Industrial Safety Equipment
5721 WEST 96TH ST., LOS ANGELES 45, CALIF.
Other Offices in San Francisco & Houston

If you write maker identify as IEN - 12116

INDUSTRIAL INKS To Mark Anything!

Whatever the substance, Phillips has an ink to mark it permanently and legibly—or can make one. Marking experts insist on "Clear Print" Wood Block Stamp Pads and Opaque Inks. They get clear, sharp, fast-drying impressions. Also inks for brush, pen, stencil or machine application available in a variety of colors and quantity containers.

★ Quick Laboratory Service On Your Problem Markings

★ To Permanently Mark . . . Metals, Plastics, Glass, Wood, Paper, Leather, Ceramics—glazed, varnished or lacquered surfaces and virtually every other known material.

J. A. PHILLIPS President
PHILLIPS PROCESS CO. INC.
192 MILL STREET
ROCHESTER 14, N. Y.

If you write maker identify as IEN - 12117

FEDERAL PRESSES
37 YEARS OF QUALITY CONSTRUCTION

BALANCED POWER

Built of finest materials, all working parts of Federal Presses are carefully machined, fitted and aligned to provide balanced power throughout their operating range. Choose Federals for your press room. Six to 80 tons. Also dial feeds. Write for catalog.

THE FEDERAL PRESS CO.
503 Division St., Elkhart, Ind.

If you write maker identify as IEN - 12118

NoDrip ...STOPS CONDENSATION DRIP!

NoDRIP PREVENTS RUST in addition to stopping drip and keeping floors dry.

ANYONE CAN APPLY

Brush, trowel or spray NoDrip on tanks, condensers, suction lines, vats, pipes, walls ceilings, etc. NoDrip adheres to metal, concrete, brick, plaster. It forms a seamless covering that is effective as soon as dry. Acid, alkali and brine resistant.

Interesting 32-page Handbook shows what NoDrip is and what it does. It's free. Send coupon today.

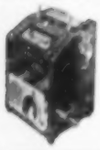
☐ SEND NoDRIP HANDBOOK
NAME
COMPANY
ADDRESS
CITY STATE

J. W. MORTELL CO., 510 BURCH ST., KANKAKEE, ILLINOIS
TECHNICAL COATINGS SINCE 1895

If you write maker identify as IEN - 12119

means wasted fuel

The designing engineer, the mechanic and the pilot, all find Cambridge Exhaust Gas Analyzers essential for developing, adjusting and operating internal combustion engines. These instruments make available continuous indication of air-fuel ratio of the mixture being supplied to the engine.



exhaust gas tester

determines the completeness of combustion in one or all cylinders. This rugged and accurate instrument is conveniently portable for field and shop use.

aero mixture indicator

is a flight instrument for installation in single or multi-engine planes. Its use makes possible greater pay load, cruising radius and safety.

Send for literature

CAMBRIDGE INSTRUMENT CO., Inc.
3716 GRAND CENTRAL TERMINAL, NEW YORK 17, N. Y.
Pioneer Manufacturers of Precision Instruments

If you write maker identify as IEN - 12120

JEFFREY
ESTABLISHED 1877
THE JEFFREY MANUFACTURING CO.
914 Fourth St., Columbus 16, Ohio

If you write maker identify as IEN - 12121

MECHANIZE
4 Scrubbing Operations into 1
with a COMBINATION SCRUBBER-VAC!

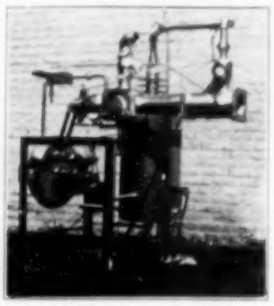
Here's a single cleaning unit that completely mechanizes scrubbing. It applies the cleanser, scrubs, rinses if required, and picks up — *in one operation!* The *self-propelled Model 21SP* at right, for heavy duty scrubbing of large-area floors, has a 20" brush spread, and *cleans up to 8,750 sq. ft. per hour. Finnell* makes *Scrubber-Vac Machines* in a full range of sizes (no need to *over-buy* or *under-buy*) . . . available on either lease or purchase plan. For demonstration, consultation, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 2611 East Street, Elkhart, Indiana.

FINNELL SYSTEM, INC.

If you write maker identify as IEN - 12122

GENERATING . . Fuel oil vaporizer produces gas to burn in a furnace

Source: VAPOFIER CORP.
10314-18 S. Throop St., Chicago 43, Ill.



Ask for Bulletin 102-A

New model, No. 11, has been added to the company's line of gas generators to provide capacity between 1,000,000 and 4,000,000 btu. per hour of Vapogas from 7½ to 28 gph. of No. 1 fuel oil. Four gallons of this oil will produce heat equivalent to 1,000 cu. ft. of 550-btu. gas. The new unit measures 55½ by 26½ by 61 inches. It is served by a motor driven blower supplying air for combustion. It connects to a gas manifold serving one or more furnaces.

A pilot flame fires vertically downward into a cylindrical combustion chamber located centrally in the main cylindrical housing. The chamber terminates a little short of the bottom of this housing. Products of combustion move downward from the burner to pass through the fuel oil held at a regulated level near the bottom. These gases enter the fuel oil and return upward through the annular chamber inside the insulated housing carrying vaporized oil with them. Oil and vapor are superheated as they move up along the outer wall of the combustion chamber into an outlet pipe that enters a venturi near the top of the assembly.

Air, supplied by the motor driven blower, connects through this venturi to mix with the heated vapor and to set downward flow of the vapor through the combustion chamber and back up through the oil. A small portion of the gas thus formed is returned to supply the pilot burner. The balance flows into the manifold. Controls regulate the operation to maintain constant fuel air ratio. The equipment adjusts itself automatically to any change in requirements.

If you write maker identify as IEN - 12123

CONNECTOR . . Slip ring assembly provides 46 circuits in 2 in. length

Source: ELECTRO-TEC CORP.
4-8 Romanelli Ave., South Hackensack, N. J.

Made to order

New assembly in the company's line of miniature slip rings, previously described IEN-437-52, mounts 46 rings each 0.023 in. in width with barriers between the rings measuring 0.02 inch. Gold finish is employed for constant low voltage drop between the rings and the wire brushes that contact them. The assembly is representative of miniature units the company is prepared to supply to specification.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12124

Kicker Arms... Powered by NOPAK Cylinders

Illustration shows how Kicker Arms have swept a board from conveyor to transfer belts. A NOPAK Model "E" A-1 Cylinder is used.

. . . sweep boards from Conveyor to Transfer Belts

In the panel-gluing operation at Potlatch Forests, Inc., boards coming from the glue applicator on a conveyor belt are shifted to the transfer belts which deliver them to the electronic gluer.

As each board hits the "bumper", a solenoid valve, controlled by a microswitch, actuates a NOPAK Model "E" Cylinder. The cylinder piston rod is coupled by bell-crank linkage to roller-tipped kicker arms which swing in a horizontal arc over the conveyor belt to sweep the board off the conveyor belt to the transfer belts which run at right angles to it.

This materials-handling operation is typical of many similar applications in which NOPAK Valves and Cylinders are used. For others see the NOPAK Application Manual.

GALLAND-HENNING MFG. CO., 2760 S. 31st St., Milwaukee 46, Wis.

Refer to Sweet's File for Product Designers, or write for Bulletin SW-1.

Representatives in Principal Cities.

NOPAK
VALVES AND CYLINDERS
DESIGNED for AIR and HYDRAULIC SERVICE

If you write maker identify as IEN - 12125

Need Rails—Switches—Frogs—Guard Rails or Track Tools? For best selections and prompt deliveries—try FOSTER—shipments of most items can be made from stocks in our five nationwide warehouses.

RAILS—New and Relaying Foster stocks are being replenished daily. Any items we did not have last week, we'll probably have next week. We match specifications and sizes to meet all your requirements on any job, new installations or replacements. *Call on Foster for all your needs for Industrial Track Equipment and Supplies.*

Write for Track Equipment Bulletin IE11.

L. B. FOSTER CO.
CHICAGO 4, ILL. HOUSTON 2, TEX.
PITTSBURGH 30, PA. NEW YORK 7, N.Y.

If you write maker identify as IEN - 12126

drill
5 to 7 times more holes in concrete

tilden
ROTARY
KONKRETE KORE DRILLS

You can drill straight, clean, ready-to-use holes at speeds up to 6 inches per minute—even through steel reinforced concrete. Cuts 5 to 7 times more holes than competitive drills. Special diamond-ground, sintered carbide cutters drill up to 1,000 inches of concrete without resharpening. TILDEN factory precision resharpening is FREE! 29 standard sizes—3/16" to 4" dia.—interchangeable shanks up to 60".

PATENTED CORE SLOT EXPELS CUTTINGS AUTOMATICALLY!

U. S. Pat. No. 2506474

WRITE TODAY for free, illustrated catalog.

SOLD BY SUPPLY HOUSES EVERYWHERE

TILDEN TOOL Manufacturing Company
209 Los Mullines • San Clemente, Calif.
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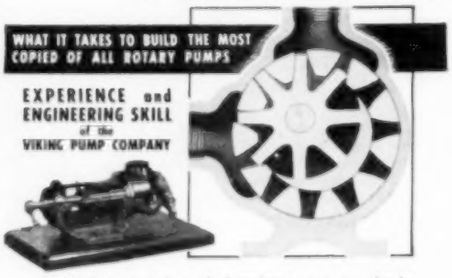
1995 N. Fair Oaks Avenue Pasadena 3, Calif.

If you write maker identify as IEN - 12127

WHAT IT TAKES TO BUILD THE MOST COPIED OF ALL ROTARY PUMPS

EXPERIENCE and ENGINEERING SKILL of the VIKING PUMP COMPANY



Slide rule, graph and drawing paper are basic in developing rotary pump ideas.

The answer to Viking leadership, however, is beyond these basic materials.

Viking's store house of ideas holds thousands of feet of micro-filmed installation facts and drawings. Their use, plus continual experimenting and testing of new ideas produces results that make Viking the most copied of all rotary pumps.

Send for descriptive folder 52SF today

VIKING AN HONORED NAME IN PUMPING

Viking PUMP COMPANY
Cedar Falls, Iowa

If you write maker identify as IEN - 12128

Ready!

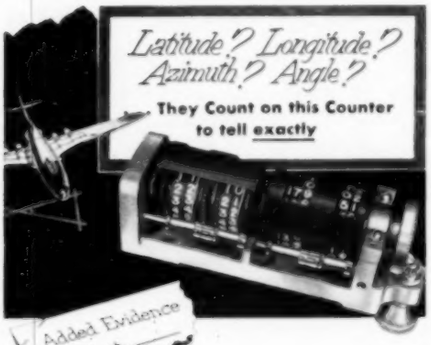
SEE how to use standard Mead units to make automatic or semi-automatic machines!

New 16-page photo-booklet shows how typical production problems were solved. Alert production men will readily adapt the ideas to their own needs.

Write for NEW "BOOKLET 39" *Now!*

MEAD SPECIALTIES CO., Dept. EA-112, 4114 N. Knox Ave., Chicago 41, Ill.

If you write maker identify as IEN - 12129



Added Evidence that—

Everyone Can Count on VEEDER ROOT

Aerial navigators and bombardiers rely on the figures that keep turning up on this Veeder-Root Counter, specially designed for the Armed Forces. And if *you* need to know exactly where you are, with any product or mechanism that's vital to Defense, then you can count on Veeder-Root to help you, to the utmost limits of ability . . . and of available capacity. Write:

VEEDER-ROOT INCORPORATED
"The Name That Counts"
HARTFORD 2, CONNECTICUT
Chicago 6, Ill. • New York 19, N. Y. • Greenville, S. C.
Montreal 2, Canada • Dundee, Scotland
Offices and Agents in Principal Cities

If you write maker identify as IEN - 12131

COMMUNICATING . . Talk-listen unit for installation in desired multiple

Source: CLEVELAND ELECTRONICS INC.
6638-42 Euclid Ave., Cleveland 3, Ohio

$15.50 each

Aluminum voice coil and assembly in an aluminum cabinet, measuring 4 by 4½ by 6 in., characterizes this new Cletron talk-listen station for two-way conversation. The control switch is located on the front of the housing. The weatherproof speaker is equipped with a 45-ohm aluminum voice coil.

The unit is weatherproof and can be installed indoors or outside. Installation is in connection with an amplifier, supplied by the user to meet his own requirements, depending on the number of units and the distance between them. Operation is on 110-volt 60-cycle ac.

If you write maker identify as IEN - 12132

HEATING . . Gasoline blow torch holds pint of fuel in seamless body

Source: P. WALL MFG. CO.
215 Erie Ave., Grove City, Pa.

Pint size unit, with either a steel or brass tank, has been added to the company's Pisto-Grip line of gasoline blow torches. Construction includes a cast bronze burner, needle type control valve, blow proof hand pump. The pump, burner and filler inlets are brazed in place. Shipping weight is 4 lb. for the new torch. List price is $8.35 to $10.50.

If you write maker identify as IEN - 12133

TRUCK . . Two wheel hand design, steel tube frame, loads to 500 pounds

Source: INDUS CORP.
429-33 N. Holmes Ave., Indianapolis 22, Ind.

Illustrated are two models in a new line of general purpose hand trucks with mounting on semi-pneumatic or solid rubber tires. Weight ranges from 23 to 28 pounds. The steel tube frame is equipped with one or two hand grips with rubber sleeves. Brackets on which the wheels are mounted back of the main frame are shaped so the truck can be slid up or down a stairway.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12134

PAGE FENCE *Since 1883*

• AMERICA'S FIRST WIRE FENCE •

Sabotage is a danger which calls for vigilance day and night. Property line vigilance is the job for Page Chain Link Fence, now as it has been for more than 60 years. Consult the nearby, long-experienced Page Fence engineering and erecting firm, which will submit cost estimates without obligation. Name and address will be sent with illustrated fence data on request.

Write to PAGE FENCE ASSOCIATION in Monessen, Pa., Atlanta, Bridgeport, Chicago, Denver, Detroit, Los Angeles, Philadelphia, New York or San Francisco.

PRODUCT OF PAGE STEEL & WIRE DIVISION OF AMERICAN CHAIN & CABLE COMPANY, INC.

If you write maker identify as IEN - 12135

SPEED UP SMALL PARTS ASSEMBLY

Parts feed automatically toward front—end reaching and fumbling.

Bins taper toward front to form convenient semicircle—keep all bins within easy reach.

Stacking, locking construction for rigid set-ups, easily changed when necessary.

All-welded construction. Smooth, folded edges.

New-design, adjustable hoppers provide increased capacity and permit regulated flow of parts according to sizes and weights.

Two sizes—tapered or straight sides.

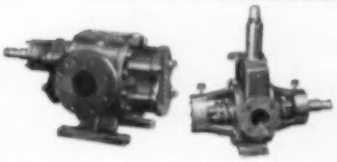
IMMEDIATE DELIVERY

Manufactured and sold in Canada exclusively by Wickware-Stackbin, Ltd., Ottawa

Write Stackbin Corp., 1077 Main Street, Pawtucket, R. I.

STACKBIN SYSTEM
"Stacked and Still Accessible"

If you write maker identify as IEN - 12136



Two kinds of fluids demand two kinds of rotary pumps

For Viscous Liquids, it's the Worthington Herringbone-Gear (GA and GR) design that eliminates end thrust, operates smoothly and quietly, and reduces bearing wear. For very thin non-lubricating liquids, it's Worthington's sliding vane (VE) types, with automatic compensation for wear, high suction lift, and replaceable wearing parts.

Capacities: Herringbone-Gear—1 to 5,000 gpm (pressures to 500 psi). Sliding Vane—25 to 1,000 gpm (pressures to 200 psi).

Worthington Corporation, Pump and Compressor Merchandising Division, Harrison, N. J.

PC-2-17

WORTHINGTON
Standard Compressors

If you write maker identify as IEN - 12137

LOOK!

Alloy "specs" identified in seconds

If you're working with alloy steels, here's a new Frasse chart you can't afford to be without. With it you can identify a steel requirement in less than 30 seconds—save time normally spent hunting through "specs."

The chart, compiled by Frasse Technical Service, shows chemical analysis requirements for each of 70 Military, Army, Navy, Aeronautical, and Federal specifications. Also lists specified forms (sheets, bars, etc.) and nearest corresponding SAE, AISI and ASS type numbers.

You can tack it on the wall, file it in your desk drawer, or slip it under glass for ready reference. Send for your free copy of this handy chart today.

Call FRASSE 1st for Alloy, Stainless and Carbon Steels

Peter A. FRASSE and Co., Inc.
17 Grand Street, New York 13, N. Y.
Lyndhurst • Philadelphia • Buffalo • Syracuse

If you write maker identify as IEN - 12138

JOHNSON
Self-Aligning
BEARINGS REDUCE ASSEMBLY COSTS

Ledaloyl

Johnson Ledaloyl Bearings in numerous self-aligning styles are designed to slip into place and adjust themselves to shaft position. They require no machining, no fitting. They are produced by powder metallurgy and are self-lubricating. Catalog L-5 shows designs of items and lists sizes available from stock.

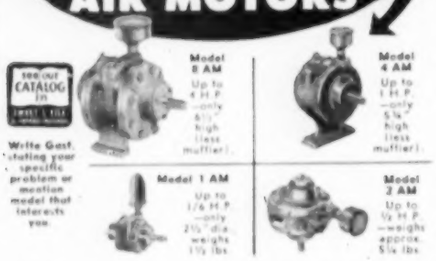
Write for your copy today.

JOHNSON BRONZE CO.
476 S. Mill St., New Castle, Pa.

JOHNSON JB BEARINGS
Sleeve-Type

If you write maker identify as IEN - 12139

Get astonishing POWER and other unique advantages with GAST rotary AIR MOTORS



FOR YOUR ORIGINAL EQUIPMENT APPLICATIONS . . .

Gast rotary-vane Air Motors may solve tough problems on **your** product! They're lower in first cost, variable in speed, explosion-proof, quick starting, **amazingly** compact and light compared to electric motors.

Four sizes available, reversible and non-reversible ball bearing types, several mounting styles, speeds to 12,000 RPM. Numerous accessories. "Air may be your Answer!"

Original Equipment Manufacturers for over 25 years

GAST ROTARY AIR MOTORS · COMPRESSORS · VACUUM PUMPS
GAST MANUFACTURING CORP., 130 Hickory St., Benton Harbor, Mich.

If you write maker identify as IEN - 12140

Automatically
SOUNDS SIGNALS, OPERATES EQUIPMENT ON ACCURATE SCHEDULES

Montgomery PROGRAM CLOCKS & INDUSTRIAL TIMERS

Program clocks for automatic control of signal systems, governing work periods, permitting manual operation for special programs or emergency alarms without affecting accuracy of pre-set schedule.

Industrial timers start and stop equipment automatically to a pre-set schedule. Wide application for shop and laboratory operations. Special timing equipment engineered to your requirements.

Request free specification and data sheets

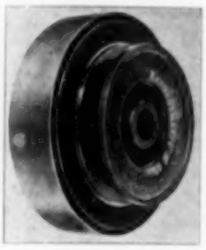
MONTGOMERY MANUFACTURING CO., Owensville 8, Ind.
Please send free Industrial Timer data sheets

Name .....
Position ..... Company .....
Address ..... City ..... State .....

If you write maker identify as IEN - 12141

CLUTCH . . Centrifugal disc design, 2½ to 9 hp., engages at set speed

Source: FEDERAL SEAL & GEAR CORP. W. Grove St., Kendallville, Ind.



About $18 to $24

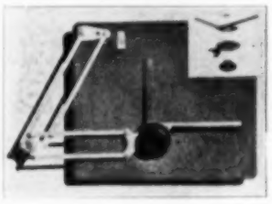
Smooth engagement and clean release characterize the action of this new centrifugal clutch. Spring loaded wedges ride in radial keyways in the clutch plate to move it toward engagement as speed comes up to a predetermined rate. The wedges retract to release the drive when speed falls below the set point. Standard construction provides for engagement at 1,250 rpm. and release at 1,200 rpm.

The clutch facing measures 6½ in. in diameter. The assembly is available with a single or double V-belt sheave or a chain sprocket. Ball bearing design is standard. Three bore diameters are ¾, 1 and 1⅛ inches.

If you write maker identify as IEN - 12142

DRAFTING . . Parallel arm machine and board for 9 by 12 in. drawings

Source: DRAFTING EQUIPMENT CO. 502-6 Randolph St. East, Meadville, Pa.



You can carry it

Model 10-H is a new assembly of the company's Drafto equipment in which an improved protractor provides an interlock between the clamping nut and the protractor disc to hold rigidly when the scale-clamping knob is tightened. The integral scales can be set at any angular position to 90 deg. on each side of zero. The protractor is graduated in 2-deg. divisions for a 180-deg. arc. It carries additional graduations for the 45-deg. positions. Mounting is on a Masonite or Presdwood board sufficiently large to take a 9 by 12-in. drawing.

If you write maker identify as IEN - 12143

MANAGEMENT . . Keeping your plant up to date is subject of new book that tells how to go about it

Machinery & Allied Products Institute
120 S. LaSalle St., Room 846, Chicago 3, Ill.

Detail procedure is described in the 48-page "Company Procedural Manual on Equipment Analysis" to supplement the information in the Institute's book, "MAPI Replacement Manual", previously reviewed IEN 3803-50. The earlier book tells how to determine when a machine is "dead". The Procedural Manual, copyright 1951, presents analysis forms and instructions to help you determine economic advantage of new equipment, re-equipment or replacement, plant expansion. It lists at $5. The earlier book lists at $4.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12144

SPEEDY AIR VISE

SPEEDS UP

✓ MILLING	✓ PUNCHING
✓ DRILLING	✓ BENDING
✓ TAPPING	✓ RIVETING

GRIPPING FORCE 15 TIMES AIR LINE PRESSURE

Speedy Air Vise helps you do dozens of operations faster, better, cheaper—by air pressure! Foot control valve opens and shuts vise instantly, leaving *both* hands free to produce *more!* Jaw opens up to 3 inches, holds castings, parts, jigs, etc. Compact and trouble-free.

Complete with Foot Control, Air Hose and Fittings .....only **$29.90**

Prompt Delivery from Your Supplier or Write Direct

W. R. BROWN CORPORATION • 2645 N. Kostner Ave., Chicago 35, Ill.

AIR REGULATORS · AIR FILTERS · AIR GUNS · PORTABLE COMPRESSORS

If you write maker identify as IEN - 12145

MOISTURE'S NO PROBLEM

MUCKLE VENTS

chase out foul, wet air!

- Good looking
- Fit any roof
- Easy to install
- Motor out of line of air flow — for better performance in moisture filled air

Muckle WRITE TODAY FOR COMPLETE INFORMATION

MANUFACTURING CO. OWATONNA 33, MINN.

If you write maker identify as IEN - 12146

INK MARK

METALS, PLASTICS AND OTHER MATERIALS WITH—

ACRO A. O. & A. X. INKS

PRINT METALS

PLASTICS AND OTHER MATERIALS WITH—
ACROMARK PRINTING MACHINES

STAMP

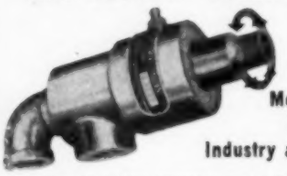
STEEL TOOLS, PARTS AND PRODUCTS WITH OTHER ACROMARK MARKING AND NUMBERING MACHINES

WRITE TODAY FOR MARKING INFORMATION. NO CHARGE FOR OUR ENGINEER'S RECOMMENDATION.

The ACROMARK Company
7 MORRELL STREET, ELIZABETH 4, N. J.

If you write maker identify as IEN - 12147

ROTARY UNIONS
(Trade Name)



Type "S" Rotary Union

Meets Special Demands of Industry and Defense

Our engineers have overcome many difficult sealing problems for which no standard models were available. A few of these covered high pressure dryers with 200 PSI steam, hot water applications with 300 PSI, actuating hydraulic rams, core drilling, deep hole drill applications for machine tool manufacturing, and air clutches. We also take great pride in having developed new and unusual sealing methods for the U. S. Armed Forces.

Call one of the offices listed below for consultation on *any* sealing problem, or write Dept 11E for our catalog.

"Where Good Connections Count"

PERFECTING SERVICE COMPANY
332 Atlanta Avenue (Home Office and Factory) Charlotte, N.C.
Atlanta · Chicago · Cleveland · Philadelphia · Providence · New York · Montreal · Toronto

If you write maker identify as IEN - 12148

WHEELS FOR INDUSTRY

A type for every load and floor

Bassick "Alcore" (right) . . . this wheel's aluminum alloy core makes it about *50% lighter* than iron or steel core wheels of the same dimension and load rating. Soft rubber tread, vulcanized on core, is highly resilient, power-saving. Sizes: 5 to 12 in. Capacities: 290-750 lbs.

Bassick "Omcore" . . . soft rubber tread vulcanized on semi-steel core. Sizes: 5 to 16 in. Capacities 300-1180 lbs.

Bassick "Boco" . . . soft rubber tread vulcanized on solid composition core eliminates tire changes, protects floors. Sizes: 1⅝ to 8 in.

Bassick "Atlasite" . . . solid, special rubber composition wheels with hard tread equal carrying capacity of metal wheels, with less floor wear and noise. Sizes: 1⅝ to 8 in.

Bassick "Canaphin" . . . solid composition wheels molded of macerated canvas and phenolic resin to resist severe shock, acids and heat. Sizes: 3 to 8 in.

WRITE FOR FREE CATALOG 134A for full data on all Bassick Wheels and Casters. THE BASSICK COMPANY, Bridgeport 2, Conn. *In Canada:* Belleville, Ont.

Bassick
A DIVISION OF STUART SW HARDISTY
MAKING MORE KINDS OF CASTERS . . . MAKING CASTERS DO MORE

If you write maker identify as IEN - 12149

NEW CUTLER-HAMMER STANDARD DUTY 3 ELEMENT PUSHBUTTON STATION

with the greatest array of wanted features ever offered to machine designers and users

Cutler-Hammer announces a new standard duty 3 element pushbutton station for use with magnetic starters on reversing and 2-speed drives. This new 3 element station can be described as the station most closely formulated to the requirements of the men who design, buy, use and service motorized machines. This station has every wanted and important feature, every feature found in any other 3 element station and some features found nowhere else. Check this new pushbutton station carefully and *let your comparison be your guide.* CUTLER-HAMMER, Inc., 1878 St. Paul Ave., Milwaukee 1, Wisconsin. *Associate:* Canadian Cutler-Hammer, Ltd., Toronto, Ont.

CHECK THESE FEATURES

Let your COMPARISON be your guide!

New Three Element Pushbutton Station weighs one pound, measures only 5-⅝ x 2-⅝ x 2-½. Beautifully styled. Cover and base desirable U-shape construction, simple, sturdy, accessible. Conduit knockouts *both* top *and* bottom. Cover lifts off when you loosen 2 screws that are retained by fiber washers. Finding guides assist accurate replacement of cover.

Mechanism superbly engineered. Terminals fully exposed, accessible and easily identified when cover is removed. 3 connectors simplify internal wiring. *Wiring cannot interfere with operation of contacts.* Terminals arranged so connections for normal reversing or two speed operation are on one side of the unit and don't cross one another. Stop button has normally closed contacts. Others have normally open-normally closed contacts for maximum circuit utility.

Silver to silver contacts with desirable wiping action that assures good electrical connection even on low voltages.

Pushbuttons are smooth-faced, concave and big for annoyance-free gloved finger operation. Buttons are friction-free, *won't stick, will* last longer. Easily replaceable.

The two-circuit buttons are mechanically interlocked for safety and circuit simplification.

•

Also available 2 element standard duty pushbutton station with same enclosure features and appearance.

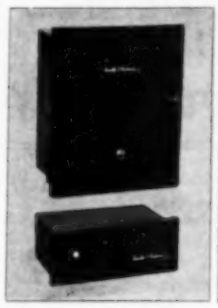
CUTLER-HAMMER
MOTOR CONTROL
C-H

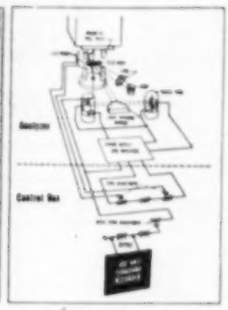
NEW 2 element standard duty pushbutton station rated up to 600 volts. Maintained contact (snap switch) type. With U-shaped cover construction.

If you write maker identify as IEN - 12151

TESTING . . Electronic analyzer reads oxygen in flue or process gas

Source: ARNOLD O. BECKMAN INC.
1818-22 Mission St., South Pasadena 5, Calif.





Illustrated details in Bulletin 108

Close track can be kept on combustion performance in boilers, furnaces, kilns, refineries by application of this new **Model F-3** oxygen analyzer and any standard make of potentiometer recorder, controller or pneumatic receiver. The two-part instrument is available for combustion ranges between 0 to 5, 10 or 15 per cent oxygen in standard construction. Other ranges can be specified. Accuracy is within 1 per cent of scale for spans of 5 per cent or greater.

Operation is based on the characteristics, possessed only by oxygen, of attraction into a magnetic field. The instrument measures this characteristic by means of a glass "dumbbell" that is suspended to rotate on a conductive coated quartz fiber between magnetic pole pieces. A mirror rotates with the dumbbell to project a beam from a light source to a dividing mirror located between two phototubes. Any unbalance output from the tubes, due to the dumbbell having rotated from center, is amplified and employed to return the dumbbell to center or null position. The rebalancing potential output is measured and recorded on the connected receiving instrument.

Each ball of the dumbbell is in a non-uniform magnetic field and is displaced, to result in rotation, by the sample gas which is attracted to the region of greatest flux density. Amount of rotation is proportional to the oxygen content in the sample. The gas to be analyzed is drawn in and exhausted by sampling apparatus which the company can supply or the user can obtain from a number of sources. Instrument operation is on 110-volt 60-cycle ac. Electrical output is standard at 25 mv. for full scale at 20-ohm impedance. Pneumatic output, when specified, is 3 to 15 lb. either direct or reverse acting. Dimensions of the analyzer are 16 by 7 by 18⅛ inches. The control box measures about 14 by 11 by 5 inches.

If you write maker identify as IEN - 12152

EQUIVALENTS . . Pocket reference book on common and decimal fractions with tolerances

Handy Length Book Co.
3509 17th St. S. W. Canton 6, Ohio

At-a-glance reference is provided in new 144-page pocket book for tolerances on fractions to 1 inch. The book, list price $2, is in two parts. The first lists common fractions with their three-place decimal equivalents and their corresponding values at plus or minus tolerances to ¼ in. maximum. The second lists two-place decimal fractions and the nearest common fraction with tolerances maximum at .25 inch.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12153

AT YOUR SERVICE

2 NEW Shenango bulletins

. . . on symmetrical or annular parts, ferrous and non-ferrous

FIND out about the many advantages and savings you stand to gain with Shenango centrifugally cast parts.

BULLETIN NO. 150 covers non-ferrous parts in manganese and aluminum bronzes, red bronzes, brass, Monel Metal and special alloys.

BULLETIN NO. 151 covers parts of Meehanite Metal, Ni-Resist and special iron alloys.

Either or both bulletins are yours for the asking.

SHENANGO-PENN MOLD COMPANY
Centrifugal Castings Division
Dover, Ohio
Executive Offices: Pittsburgh, Pa.

SHENANGO
ALL RED BRONZES • MANGANESE BRONZES • ALUMINUM BRONZES
MONEL METAL • NI-RESIST • MEEHANITE METAL

If you write maker identify as IEN - 12154

Solve "small parts" assembly problems

• Assemble • Press
• Rivet • Stake
• Punch • Mark . . .

with ½ ton or 1 ton *Han-D-Press* the new Hannifin air-operated bench press.

Write **HANNIFIN**

Hannifin Corporation • 1107 S. Kilbourn Ave. • Chicago 24, Illinois

If you write maker identify as IEN - 12155

BE READY FOR *Every* CLEANING NEED

IDEAL BLO-R-VAC

Triple Value!

A "Tank-Type" Cleaner
A "Hand-Type" Cleaner
A Blower-Sprayer

All in One!

CONVERTS IN A JIFFY! . . . from a "Tank-type" cleaner to a "hand-type" cleaner or blower.

Power-packed and with highest cleaning efficiency, IDEAL Blo-R-Vac speeds *all* your cleaning jobs! Low in first cost, it's actually *three rugged cleaners in one!* Vacuums lint, dirt, picks up water. Promotes scrap salvage — metal particles stay in big tank; lighter particles go into dust-tight bag. Power unit serves as a separate blower-sprayer or hand type cleaner. Full selection of attachments. 1½ or ⅓ H.P.

Sold Through America's Leading Distributors
Canadian Distributor: Irving Smith, Ltd., Montreal

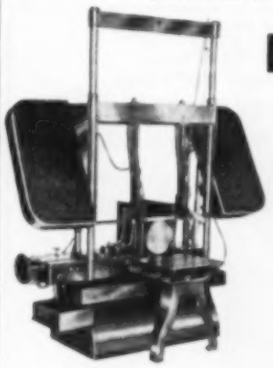
TRY IT FREE!

IDEAL INDUSTRIES, INC.
1108 Park Ave., Sycamore, Illinois
Arrange FREE DEMONSTRATION of your new BLO-R-VAC in our plant.

Name _____
Company _____
Address _____
City _____ Zone _____ State _____

If you write maker identify as IEN - 12156

LOOK...



Big Saw Capacity (24" x 24") in minimum floor area

W. F. WELLS & SONS
MODEL J

W. F. Wells & Sons, leaders in the horizontal band saw field, are proud to introduce their new Model "J" large capacity metal cutting band saw.

This machine due to its full hydraulic operation can be set for a continuous cycle making it practical for small jobs as well as large ones.

All welded cutting head gives it the extra rigidity and strength for the large cutting jobs.

This machine was constructed because of popular demand by the industrial manufacturers who need this large capacity at a reasonable price.

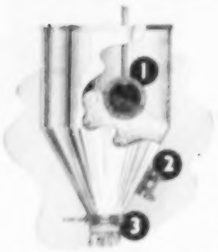
For full details on this machine and other models and accessories write W. F. Wells & Sons.

W. F. WELLS & SONS
Three Rivers, Michigan

If you write maker identify as IEN - 12157

for Complete Hopper Efficiency

SYNTRON



1. Hopper Level Switches

Eliminate spillage and shortage of materials. Automatically maintain desired levels of materials—from fine to coarse—in bins and hoppers. Control feeding.

2. Electric Vibrators

Assure free-flowing bins, hoppers and chutes. Eliminate arching and plugging of materials without hammering and rodding that damages equipment and wastes man-power.

3. Flow Control Valves

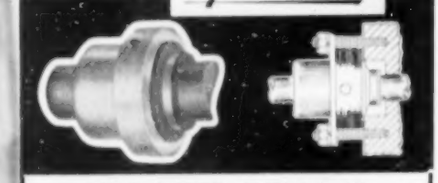
Control flow of bulk materials from bins, hoppers and chutes. Rotating control lever increases or decreases opening of flexible iris type diaphragm and flow of material without jamming or clogging.

Write for FREE Illustrated Folders

SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

If you write maker identify as IEN - 12158

For "SLURRY" Problems apply SYNTRON



SHAFT SEALS

with Flush Connection and Abrasive Excluder

Provide Positive, Long-Life Sealing of Abrasion Laden Liquids

If you are experiencing leakage, shaft wearing conditions, gland adjustments or high maintenance costs in the handling of slurry laden liquids—you can eliminate all of these with Syntron Shaft Seals . . . self-contained self-lubricating units.

Write for FREE Catalog Folder

SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

If you write maker identify as IEN - 12159

SYNTRON

SELENIUM RECTIFIER
POWER CONVERSION UNITS
For Changing High Voltage AC to DC

- Long Life
- High Efficiency
- Good Regulation
- Large Overload Capacity
- Low Maintenance and Operating Costs

Provide 125 Volt to 550 Volt Direct Current For—

Mining Machinery — Haulage Locomotives — Elevators — Cranes — Hoists — Machine Tool Motors — Printing Press Motors — Synchronous Motor Excitation — Magnetic Chucks — High Intensity Arc Lights — and General d-c Power Service.

"Packaged Power Units, Ready For Operation"

Write For FREE Catalog Folder

SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

USEFUL INFORMATION

NEWS NOTES

If you write maker identify as IEN - 12160

ADHESIVE . . Application instructions on new line of organic materials for metals, nonmetals

Eutectic Welding Alloys Corp.
40-42 172nd St., Flushing 58, N. Y.

ChemoTec Division of the company has published a new 52-page instruction book on its line of organic bonding agents, fluxes, surface fillers. Procedure, heating schedule, characteristics, joint design suggestions, strength data are given. The materials join metal to metal, glass, graphite, ceramics.

If you write maker identify as IEN - 12161

ALUMINUM . . Catalog of training films on methods of forming, machining, welding aluminum

Aluminum Co. of America
670 Gulf Bldg., Dept. 22, Pittsburgh 19, Pa.

"Educational Aids" is new 40-page booklet that lists information available from the company on aluminum and its uses. A feature is a set of how-to-do-it films that illustrates and describes methods of forming, machining, welding and brazing aluminum. It also reviews five films of general interest, tells how to borrow them, how to exhibit them, lists literature.

If you write maker identify as IEN - 12162

ALUMINUM . . Instructions on forming aluminum sheet, plate, tube, pipe in new manual

Reynolds Metals Co.
2502 S. 3rd St., Louisville 1, Ky.

New 148-page manual, "Aluminum Forming", is available only on letterhead request from engineers, designers and plant personnel. It presents first a section on metallurgical and technical data for aluminum sheet, followed by information on forming such as shearing, bending, beading, contour forming, spinning. A third section covers data on aluminum tube and pipe and a fourth describes forming, bending, swaging.

If you write maker identify as IEN - 12163

BEARINGS . . Lubrication of ball bearings is described in new 8-page bulletin with reasons why

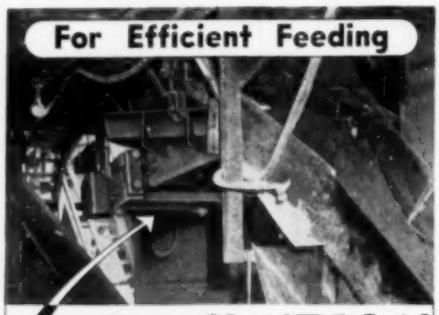
Fafnir Bearing Co.
35-39 Booth St., New Britain, Conn.

Bulletin 426 starts with reasons for lubricating a ball bearing, then describes how grease and oil are employed. Properties of a lubricant are listed, recommended general housing designs are illustrated and other designs are shown. There is a note on prelubricated bearings and lubrication of vertical mounted ball bearings.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12164

For Efficient Feeding



SYNTRON
"Vibra-Flow"
VIBRATORY FEEDERS

Handle most types of bulk materials — at variably controlled rates from pounds to hundreds of tons per hour to crushers, driers; belt conveyors, etc.

SHORT FEEDERS — LONG CONVEYORS
GRIZZLIES — SCREENS

Write for Illustrated Catalog Folder

SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

If you write maker identify as IEN - 12165

Does the Work Of Ten Men!

SYNTRON

ELECTRIC HAMMER

Its 3600 powerful blows per minute save minutes and hours of valuable manpower by drilling, cutting, chipping, scaling and a score of other jobs many times faster than they can be done by hand.

Write For FREE Catalog Folder

SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

If you write maker identify as IEN - 12166

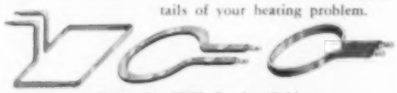
SYNTRON

Thin - Flat
ELECTRIC HEATING ELEMENTS

For rapid, uniform heating of platens, pipes, kettles, tanks, ovens, dies, dryers and ducts, by direct or indirect immersion or contact.

Available in two widths—in lengths from 9" to 124"—in most any volt and watt combination—can be furnished in various shapes.

Write for literature—or send details of your heating problem.



Write for FREE Catalog Folder

SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

If you write maker identify as IEN - 12167

SYNTRON

Test Sieve Shakers

Give You—fast, efficient sizing of test samples

- Use standard 8" Screen Scale Testing Sieves.
- 110-60 AC Operation.
- A reset timer for accurately timed test periods.
- Controlled electromagnetic vibration—no motors, pulleys etc.

Write for Free Descriptive Bulletin.

SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

If you write maker identify as IEN - 12168

It's just good business to
KEEP FLOORS CLEAN, SAFE, ATTRACTIVE!

- KENT FLOOR MACHINE with "Balanced Power"
- KENT VACUUM CLEANER for Wet and Dry Work

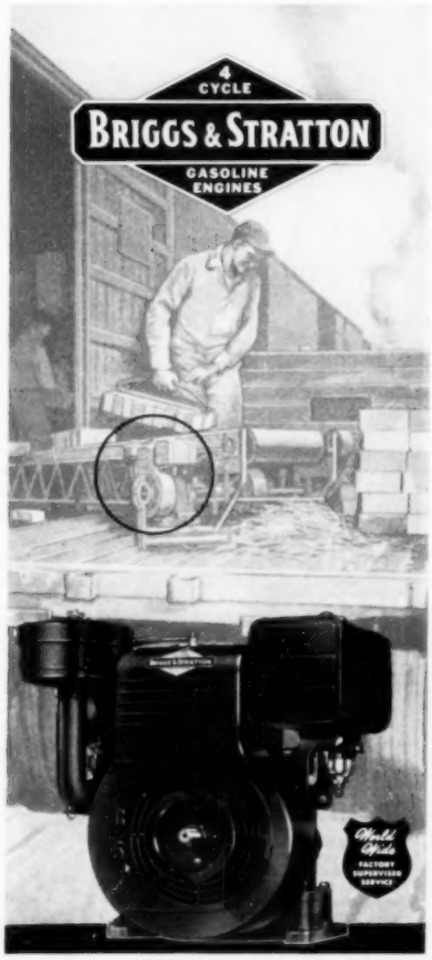
YOUR WORKERS ARE AS EFFICIENT AS THEIR EQUIPMENT! Give them the best — the "all-weight-on-brush" KENT Floor Machine with "Balanced Power" for ease of operation . . . and the KENT VACUUM CLEANER for Wet and Dry Pick-up! It pays to invest in quality!

Full Information upon Request!

CLEAN WITH **KENT** EQUIPMENT

The KENT Company, Inc. • 437 Canal St. • Rome, N. Y.

If you write maker identify as IEN - 12169



Preferred power on portable conveyors for economically moving bulk materials! These are the world's most widely used single-cylinder gasoline engines on hundreds of kinds and types of machines, tools and appliances. They are preferred by industry, construction, railroads, oil fields, and on equipment for farms and farm homes.

WHEREVER you find gasoline powered equipment doing the job better, faster — invariably the power is Briggs & Stratton. These single-cylinder, 4-cycle, air-cooled gasoline engines are leaders in the field and preferred for dependable power the world over. Briggs & Stratton Corporation, Milwaukee 1, Wisconsin, U. S. A.

In the automotive field Briggs & Stratton is the recognized leader and world's largest producer of locks, keys and related equipment.

USEFUL INFORMATION

(Continued)

If you write maker identify as IEN - 12171

CALCULATING . . Cardboard slide rule to determine vacuum pump capacity and pumping time

F. J. Stokes Machine Co.
5956 Tabor Road, Philadelphia 20, Pa.

"Vacuum Calculator" is new 9 by 3¾-in. slide rule on vacuum pump problems. Desired final vacuum is set at a slide, a key number read off, and this number then is applied to a second set of scales to determine company's pump for a desired system volume. You also can determine time required to evacuate a given volume to a specified vacuum with your present pump. A standard 6-in. slide rule with ABCD scales is included along with conversion factors.

If you write maker identify as IEN - 12172

CALCULATING . . Slide rule for weight of flat sheet material based on that of steel

Dayton Rogers Mfg. Co.
2822-26 13th Ave. S., Minneapolis 7, Minn.

First step in using company's redesigned slide rule weight calculator is to set thickness of a metal piece against width, using the slide calculator in standard manner. Weight then can be read against length. The calculator is based on sheet steel, is provided with constants to convert to weights of aluminum, copper, bronze, lead. It will be sent upon letterhead request to the company at the address above.

If you write maker identify as IEN - 12173

CLEANING . . Recommended procedures for cleaning rubber-working equipment in new booklet

Oakite Products Inc.
116-A Rector St., New York 6, N. Y.

Metal molds for rubber products, metal parts prior to rubber bonding, finished rubber parts are subject of new 24-page pocket booklet, "New Ideas in Cleaning for the Rubber Industry". The booklet presents a set of recommended procedures and materials, suggestions on equipment to use, other suggestions such as removing rubber cement from floors.

If you write maker identify as IEN - 12174

CORROSION PROOFING . . Of metal parts by vapor corrosion-inhibitor packaging is detailed

Berlin & Jones Co.
615 W. 26th St., New York 1, N. Y.

Questions and answers dealing with vapor corrosion inhibitors to protect steel and aluminum parts are presented in new 8-page Bulletin VT-1. The information is intended as a quick reference on the subject, describes use of paper and envelopes in packaging and storing, inherent possibilities.

If you write maker identify as IEN - 12175

DRIVES . . Booklet on tiny drive chain presents engineering data on how to select and use it

Link-Belt Co.
305-9 N. Michigan Ave., Chicago 1, Ill.

Book 2510 is a 16-page compilation of information on the company's $\frac{3}{8}$-in. pitch silent chain. It features a section on engineering which includes selection instructions, hp. ratings, values for wheel centers and chain lengths, standard types and sizes, sprockets. Applications are illustrated.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12176

Now you can fasten V-belts by using
ALLIGATOR
V-BELT FASTENERS

- Alligator V-Belt Fasteners and open-end (long length) V-belting in rolls will enable you to make up multiple V-belt drives for a wide variety of applications.

Available for B, C and D sizes of V-belting.
Not to be used for repairing endless cord V-belts.
Bulletin V-211 will give you complete details.
A copy mailed on request.

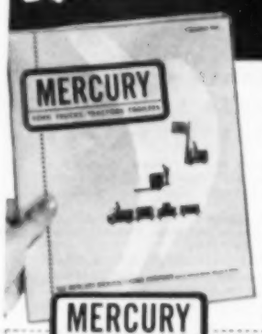
Order from your supply house

FLEXIBLE STEEL LACING COMPANY
4610 Lexington Street, Chicago 44, Illinois

Also sole manufacturers of Alligator Steel Belt Lacing for flat conveyor and transmission belts and FLEXICO Belt Fasteners and Rip Plates for fastening and repairing conveyor belts.

If you write maker identify as IEN - 12177

NEW!
IDEAS - METHODS EQUIPMENT for CUTTING YOUR HANDLING COSTS



44 PAGES OF VALUABLE INFORMATION FOR YOU

COMPARISON OF SYSTEMS —Fork truck, lift truck, tractor and trailer handling systems.

ATTACHMENT — ACCESSORIES—Mercury equipment to meet specific handling requirements.

COMPLETE PRODUCT SPECIFICATIONS—for entire Mercury line. Information for planning your plant system.

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4132 S. Halsted • Chicago, Illinois

Please send me a FREE copy of new Mercury catalog (Bulletin 300)

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COMPANY _____
ADDRESS _____ CITY _____ STATE _____

If you write maker identify as IEN - 12178

SPRACO NOZZLES

Write for NOZZLE CATALOG *to*
SPRAY ENGINEERING CO.
110 CENTRAL STREET • SOMERVILLE 45, MASS.

If you write maker identify as IEN - 12179

Wherever Engine POWER is Needed . . . to Fit the Job and Fit the Machine

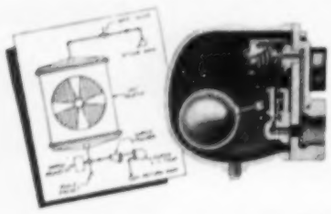
WISCONSIN *Air-Cooled* ENGINES

Because Wisconsin Air-Cooled Engines are supplied in a complete power range, from 3 to 30 H.P., there is an ideal size to fit all types of machines and power applications within this range, without wasted power and with maximum power service benefits. Heavy-duty construction, combined with extremely compact design and light weight are added advantages — and dependable AIR-COOLING permits trouble-free service under all climatic conditions.

Specify Wisconsin Heavy-Duty Air-Cooled Engines for the utmost in power satisfaction. Write for descriptive data.

WISCONSIN MOTOR CORPORATION
World's Largest Builders of Heavy-Duty Air-Cooled Engines
MILWAUKEE 46, WISCONSIN

If you write maker identify as IEN - 12180



common sense approach

to TRAP SELECTION for UNIT HEATERS

For efficient Unit Heater drainage you need a steam trap assuring high starting load capacity to deal with cold air and low steam pressure resulting from peak load.

You need continuous discharge of condensate and incondensables at or near steam temperature to prevent hot and cold air blasts.

SARCO FLOAT-THERMOSTATIC STEAM TRAP —Type FT, is unequalled for this service. The float operated main valve can be sized to handle the condensate loads from the lowest pressures up to maximum design pressure.

The action is instantaneous, no waiting to cool or for buckets to empty. The thermostatic air vent makes air binding impossible.

NEW BULLETIN 451 contains full information on latest improvements.

SARCO COMPANY, INC.

EMPIRE STATE BUILDING, NEW YORK 1, N. Y.
Represented in Principal Cities
SARCO CANADA LTD., TORONTO 8, ONTARIO

512-

If you write maker identify as IEN - 12181

MODERN TIME AND COST SAVERS BUILT BY... Standard

GRAVITY & POWER CONVEYORS

LIFT OR LOWER— FLOOR TO FLOOR WITH A

STANDARD INCLINEBELT

Move boxes, cases, cartons, sacks or bundles from basement to first floor, or any floor to floor — continuously with the Standard Inclinebelt. Compact — simple to install — minimum maintenance and attention. Lifts or lowers 10 to 20 lbs. of live load per ft.; floor elevations of 8 ft. to 14 ft. 6 inches inclusive; two belt widths to handle commodities 15½ inches to 25½ inches wide. Electric motor operated. Write for INCLINEBELT Bulletin — address Dept. IEN-112.

STANDARD CONVEYOR COMPANY
General Offices: North St. Paul 9, Minn.
Sales and Service in Principal Cities

If you write maker identify as IEN - 12182

HARPER HAS THEM!

Everlasting Fastenings by the Dozen or the Million!

- Specialists in bolts, screws, nuts, rivets, washers and fastening accessories!
- In brass, bronze, copper, aluminum, stainless steels, Monel!
- For all problems involving corrosion, heat, abrasion, stress, appearance!
- America's largest producer of non-corrosive fastenings!
- Larger stocks, greater selection —over 7000 items!
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- Ask for complete Harper Price List and Stock Book!

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EVERLASTING FASTENINGS

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8211 Lehigh Ave.
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Address.....
City..... State.....

USEFUL INFORMATION

(Continued)

If you write maker identify as IEN - 12183

ELECTRONIC PRODUCTS . . For microwave use, catalog on waveguides and test units describes use

De Mornay-Bonardi Inc.
3221-25 Burton Ave., Burbank, Calif.

"Microwave Equipment", new 134-page catalog, is arranged in three major parts. First is a section of introductory concepts on microwaves which defines them, tells why they are used, how waveguides are used, facts on waveguide length. Second is a 21-page section on microwave test equipment, measurements and calibration illustrated by schematic diagrams and c.rcuits. Balance of the catalog covers some 320 pieces of equipment as to descriptions, specifications.

If you write maker identify as IEN - 12184

ENGINES . . Operating principle is described in non-technical booklet on Lanova-type diesel engine

Lanova Corp.
38-17 30th St., Long Island City 1, N. Y.

New Second Edition of "Lanova Combustion System for Diesels" is a 60-page booklet on elementary heat engine principles, diesel engines, Lanova combustion system and its application, engineering data. Schematic diagrams are used extensively with non-technical text in short paragraphs.

If you write maker identify as IEN - 12185

ENGINEERING . . Book of design suggestions on production equipment includes information sources

Richard Rinehuls
Box 549-A, Binghamton, N. Y.

"Practical Design Guide" is a 150-page assembly of typewritten sheets that represent pages from a designer's notebook. List price is $2. Drawings and condensed text deal with applications of pneumatic cylinders and valves, electrical controls, cam design, production feeds, indexing. "Never make anything you can buy" is emphasized. A section at the rear lists references including trade publications. We were happy to find ourselves included.

If you write maker identify as IEN - 12186

FASTENINGS . . Standard types of locknuts shown and their operating principle described in booklet

Industrial Fasteners Institute
3646-50 Euclid Ave., Cleveland 15, Ohio

Thirty-six locknuts are illustrated in exterior and sectional views, their operating principle described and their features outlined in new 24-page booklet, "Locknuts". The booklet provides a review of principal available types. Manufacturer is named for each fastener shown.

If you write maker identify as IEN - 12187

HARD FACING . . Instruction booklet on resurfacing rollers and idlers with welding electrodes

Mir-O-Col Alloy Co.
310-14 North Ave. 21, Los Angeles 31, Calif.

"45-90 Method" titles new 12-page booklet of instructions on use of the company's hard-facing alloys to rebuild worn tractor and shovel rollers and idlers. The procedures are for automatic welding heads and positioners using a submerged arc method. Drawings illustrate high spots in the procedure.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12188

WORKING SHEET OR PLATE STEEL?

LOOK at what PULLMAX CAN DO

STRAIGHT CUTTING

Straight cutting, circle cutting, free hand cutting, slot cutting, beading, folding, louvering and many variations of these operations . . . ALL ON ONE PULLMAX MACHINE! Easy to set up and change tools . . . seven sizes of machines work materials up to 11/32" in mild steel . . . also works stainless steels, non-ferrous metals, wire mesh and plastics.

CIRCLE CUTTING

FOLDING

WRITE FOR LITERATURE

SLOT CUTTING **BEADING** **FREEHAND**

PULLMAX—A complete sheet and plate working shop in one machine

AMERICAN-PULLMAX CO., INC.
2459 N. SHEFFIELD AVENUE • CHICAGO 14, ILLINOIS

If you write maker identify as IEN - 12189

HOW TO CONTROL GAGES AND GAGE INSPECTION

New illustrated booklet describes and shows suggested McCaskey procedures and forms designed to provide:

- Reinspection date follow-up;
- Location and condition of each gage and measuring instrument, loaned or in cribs;
- Gage and Instrument History record;
- Central clearance record of each employee's gage and instruments;
- Tool and gage inspection report;
- Gage tag, conditional release tag for tools (fixtures), and faulty tool and gage tag;
- Instrument and gage withdrawal order, etc., etc.;
- . . . all designed for complete control with speed, accuracy and minimum clerical work.

Close control of your gages, instruments and fixtures and their inspection will reduce spoiled work and rework costs . . . and improve your product quality. Procedure approved for government contract requirements.

Write today for McCaskey Gage and Tool Inspection Control—Bulletin A-512 IEN — giving you all the facts.

THE McCASKEY REGISTER COMPANY • ALLIANCE, OHIO

McCASKEY INDUSTRIAL CONTROLS
PRODUCTION • TOOLS • INVENTORY • COSTS • MAINTENANCE

If you write maker identify as IEN - 12190

DIALCO *for* **YOUR** *product*

WHICH PILOT LIGHT DO YOU NEED?

THE BIG ONE

This Pilot Light Assembly was first made to accommodate the *S-11 lamp* and was intended for use in the cabs of great diesel locomotives.

or

THE LITTLE ONE

The miniaturization program on defense products required the development of this *sub-miniature* light. It is used on communication equipment and aircraft. Midget flanged base bulbs to fit are rated 1.3, 6, 12, and 28 volts.

Dialco HAS THE COMPLETE LINE of INDICATOR and PANEL LIGHTS

Samples to suit your own special conditions and requirements will be sent promptly and **without cost**. Just outline your needs. Let our engineering department assist in selecting the **right lamp** and the **best pilot light for YOU**.

Write for the Dialco HANDBOOK of PILOT LIGHTS

Foremost Manufacturer of Pilot Lights

The DIAL LIGHT COMPANY of AMERICA
60 STEWART AVENUE, BROOKLYN 37, N. Y. HYACINTH 7-7600

If you write maker identify as IEN - 12192

22 Pages of Helpful Information on Dust Recovery Systems

If you are now using dust or fly ash recovery equipment in your plant—or are planning installation of such equipment now or later—you will find this new Multiclone booklet full of helpful information, illustrations and diagrams outline basic principles of dust recovery and how to utilize them for maximum efficiency... how to simplify your installations... how to conserve valuable plant space... how to get high recovery over a wide range of particle sizes, etc. *A copy of this booklet should be in your files for reference and assistance in dust recovery applications. A free copy will gladly be sent you on request. Write today while supplies are adequate.*

WESTERN Precipitation CORPORATION

DESIGNERS, ENGINEERS & MANUFACTURERS OF EQUIPMENT FOR COLLECTION OF SUSPENDED MATERIALS FROM GASES & LIQUIDS

Main Offices: 1011 WEST NINTH STREET, LOS ANGELES 15, CALIFORNIA. CHRYSLER BLDG., NEW YORK 17 • 1 LaSALLE ST. BLDG., 1 N. La SALLE ST., CHICAGO 2 • HOBART BUILDING, SAN FRANCISCO 4, CALIFORNIA. PRECIPITATION CO. OF CANADA, LTD., DOMINION SQ. BLDG., MONTREAL

If you write maker identify as IEN - 12193

You can't beat a soldered connection

for electrical conductivity and permanence!

SOLDERED connections eliminate loss of current, fire hazard, radio interference and excess heat which result from loose, corroded, arcing NON-SOLDERED connections.

For over 50 years experts have specified American Beauty Electric Soldering Irons. They know American Beauty Irons are built to LAST LONGER, OPERATE DEPENDABLY and BE SERVICED QUICKLY.

Build better with solder . . . Solder better with

American Beauty

SOLDERING IRONS

WRITE FOR FREE LITERATURE

Dependable • Durable • Efficient

SINCE 1894

AMERICAN ELECTRICAL HEATER COMPANY

DETROIT 2, MICHIGAN A-108

If you write maker identify as IEN - 12195

SIGNALING . . Television equipment reproduces observed remote conditions

Source: DAGE ELECTRONICS CORP. N. 67th & Meadows, Beach Grove, Ind.

Anyone can use it

Normal room light is sufficient for picture transmission by this new portable television camera. It can be set up as a single unit for transmission to several television receivers or in multiple to transmit to one or more receivers. It operates with standard 16-mm. lenses and is fitted to mount on a camera tripod or on a fixed support. It includes a built-in electronic view finder. The assembly is in a housing measuring 14 by 4½ by 9½ inches.

Connection between the camera and the receivers is by a coaxial cable. No alterations are required to the standard television receiver in order to employ the camera. Applications are in connection with industrial operations and laboratory work too remote, inaccessible or hazardous to be viewed directly by workers on the scene.

If you write maker identify as IEN - 12196

SEALING . . Liquid material for wiring and surface protection

Source: UNITED TECHNICAL LABORATORIES Highway 32, Morristown, N. J.

Crystal clear liquid plastic

Plastik-707 is a new liquid material packaged in 12-oz. pressurized containers for spray application to provide electrical insulation and to protect surface of documents, prints, shipping labels, photographs, metal and non-metallic products. The material also is available in bulk in pints, quarts and gallons for brush application.

If you write maker identify as IEN - 12197

GAGE . . Precision blocks, chrome carbide, 0.010 to 20 inches

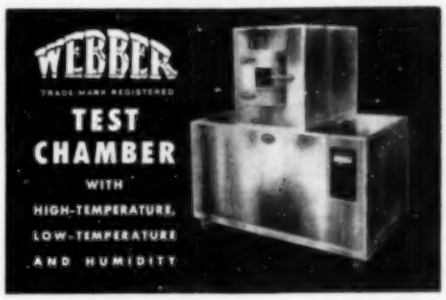
Source: DOALL CO. 252-56 N. Laurel Ave., Des Plaines, Ill.

Protected in carrying case

Four sets containing 8, 35, 37 and 83 pieces with a size range from 0.010 to 20 in. are available in either "A" or "B" accuracy in the company's new line of chrome carbide gage blocks. The units have the same coefficient of expansion as steel combined with the characteristic hardness of carbide. Surface finish is excellent. Stability is inherent. Name is DoAll DC Gage Blocks.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

If you write maker identify as IEN - 12198



★ This Webber test unit, designed for production and experimental testing, has a temperature range from +250°F., to −100°F. The pull-down to −100°F., is achieved in 45 minutes, and can be cycled from −100°F., to +250°F., in 30 minutes. 95% relative humidity is provided at temperatures between 75°F., and 95°F. Vacuum equipment can be added to simulate high altitudes. The test chamber, provided with a moisture-proof light for illumination, is 4⅓ cubic feet, 20 inches high, 20 inches wide, 20 inches deep. High and low temperatures are governed by a temperature controller with scale range from −200°F., to +400°F., with a 3 degree control point differential, 1½ degrees plus and minus. The humidity is regulated by a wet and dry bulb controller. Unit size is 60" long, 45" wide, 74" high. Apertures in left side of cabinet provide for electrical cables to energize equipment being tested. Webber offers a complete line of test units for various applications.

Write for more complete information

INDUSTRIAL FREEZER DIVISION

WEBBER APPLIANCE CO., INC.

A 2740 MADISON AVENUE • INDIANAPOLIS 5, INDIANA

If you write maker identify as IEN - 12199

Factory approved motor service in every industrial area from 97 Allis-Chalmers Certified Service Shops

ALLIS-CHALMERS CERTIFIED SERVICE SHOPS are independent service shops which meet rigid standards for ability, experience, equipment and business integrity. They use factory approved methods and parts and do your work promptly at a fair price.

Of course, Allis-Chalmers Certified Service Shops give good service on any electrical equipment, of any make. To find the Certified Service Shops in your area, call your nearby Allis-Chalmers District Office or write Allis-Chalmers, Milwaukee 1, Wisconsin. A-3947

ALLIS-CHALMERS

If you write maker identify as IEN - 12200

You "Designed" This One

the ***NEW***

Super Safe

IDEAL

Voltage Tester

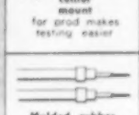
With ALL the Features Thousands of Electrical Men Told Us They Wanted — No Other Tester Has ALL of These:

Double strength, seamless plastic case

Handier center mount for prod makes testing easier

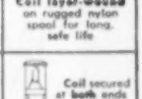
Prod storage completely shields sharp tips

Coil layer-wound on rugged nylon spool for long, safe life



Molded rubber, moisture-tight prod handles—"No-Slip" safety rings 30" neoprene leads

Plastic name plate bonded to case—**no surface metal**



Coil secured at **both** ends—Coil leads isolated, preventing shorts

"Fog-Free" window keeps out dirt

Plus Famous **IDEAL "DOUBLE PROTECTION"** . . . a solenoid, calibrated indicator AND a neon test lamp, each independent of the other—NO CHANCE OF FAILURE TO DETECT VOLTAGE

Tests 110 to 550 volts AC — 115 to 600 volts DC

SOLD THROUGH LEADING DISTRIBUTORS. SEE IT NOW!

MAIL TODAY FOR FULL DETAILS

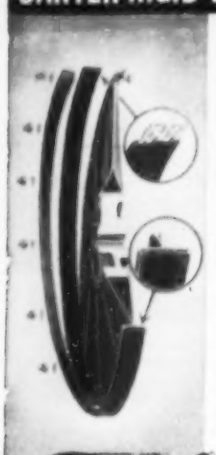
IDEAL INDUSTRIES, Inc.
1108 Park Avenue, Sycamore, Illinois

Please send me full catalog information on new IDEAL Voltage Tester

Name _____
Company _____
Address _____
City _____ Zone ____ State _____

If you write maker identify as IEN - 12202

CARTER RIGID WHEELS & TIRES



TOPS in High Speed Heavy-Duty Service for Bandsawing

Speed production, save saws, cut material loss and lower costs — with Carter Rigid Wheels and Quick Change Tires. Tires won't throw even at 1800 R.P.M. Mounted like automobile tires and rims. Changed in 10 min. Tires will outwear 3 or 4 of other makes. Available for 30 or 36-inch machines with any type of hub or bearing—either as standard equipment on new machines or for modernizing obsolete equipment.

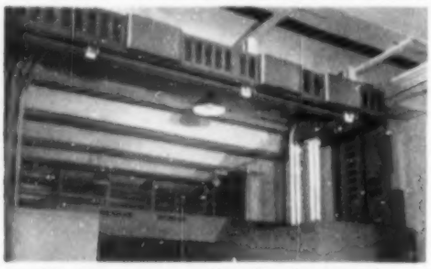
Write for free, illustrated folder.

CARTER PRODUCTS COMPANY, INC.
420 Wm. Alden Smith Bldg.
30 Louis Avenue, S. W.
GRAND RAPIDS 2, MICH.

Carter

CUTS COSTS WAY DOWN!

If you write maker identify as IEN - 12203



Modern power distribution made more convenient, more economical!

Trumbull Electric now offers LVD (Low Voltage Drop) FLEX-A-POWER with *aluminum* busbars—a major contribution to the busway field.

Aluminum LVD has the outstanding additional advantage of being 25 to 35% lighter in weight—making LVD FLEX-A-POWER easier to handle and cheaper to install than ever before. All joints are silver plated for positive contact and longer life. In many cases there is less voltage drop, which provides operating economy.

Write for complete information on aluminum LVD FLEX-A-POWER.

Trumbull Assures LASTING FLEXIBILITY in Power Distribution

TRUMBULL (T) ELECTRIC

DEPARTMENT OF GENERAL ELECTRIC COMPANY
PLAINVILLE, CONNECTICUT

If you write maker identify as IEN - 12204

Link-Belt Car Spotters release manpower for other jobs. They speed the spotting of railroad cars for loading and unloading . . . reduce switching and demurrage time. One man, using a Link-Belt Car Spotter with motor-driven capstan, can easily move up to six loaded cars at a time. Two sizes, with 5 and 10 hp motors develop 5,000 and 10,000 lb rope pulls.

Get this BOOK

Book No. 1902 A gives all the facts about Link-Belt's complete line of car spotters and drum-type pullers.

LINK-BELT
CAR SPOTTER

LINK-BELT COMPANY
Dept. 21,307 N. Michigan Ave., Chicago 1, Illinois

12,825

USEFUL INFORMATION

(Continued)

If you write maker identify as IEN - 12205

HEATING . . Selection data is featured in new catalog on horizontal and vertical unit heaters

American Air Filter Co.
123 Central Ave., Louisville 8, Ky.

Herman Nelson unit heaters are described in new 52-page Bulletin 3570 as to component parts, steam capacities, conversion factors, hot-water capacities. A 14-page section deals with selection and application with mounting height tables, quietness ratings, sample heat calculations and coverage diagram. Installation suggestions cover piping, traps, controls.

If you write maker identify as IEN - 12206

INDICATING . . Instruction sheet on how to use company's temperature-indicating lacquer

Tempil Corp.
11 W. 25th St., 5th Floor, New York 11, N. Y.

Surface preparation, application of the liquid material, special methods are described in new instruction sheet for the company's Tempilaq, a lacquer which melts at a specific temperature with a tolerance of 1 per cent. Some of the methods include use of a faint haze on glass surfaces, use on rotating parts, use under prolonged exposure to heat.

If you write maker identify as IEN - 12207

LAYOUT . . Comparative summary on four plant layout methods in 16-page report

Visual Planning Equipment Co.
River Road & Pennsylvania Ave., Oakmont, Pa.

Large aircraft manufacturer made a study on four methods of layout for a 78,000 sq. ft. manufacturing building, consisting of shop, laboratories and office. Company received permission to issue this report and will send it to you upon request to show how its three-dimensional model and Repro-Templet method compares with the other three.

If you write maker identify as IEN - 12208

LUMBER . . Booklet on Southern pine describes types, history, properties, applications

Southern Pine Association
752 Nat'l Bank of Commerce Bldg., New Orleans 4, La.

"The Southern Pine Story" begins with the tree, telling what it is, principal types, and a history from the time of Captain John Smith of Jamestown to present-day tree farms. Density, hardness and nail-holding ability are reviewed. Uses and manufacturing progress are concluding chapters in the new 32-page booklet, available upon request.

If you write maker identify as IEN - 12209

MAGNESIUM . . Instructions on finishing are given in detail by recently revised 142-page manual

Dow Chemical Co.
913-17 Jefferson Ave., Midland, Mich.

"Magnesium Finishing" titles new edition of the company's instruction manual, available on request. It describes methods of finishing, surface stability, cleaning, mechanical finishing, chemical treatments, plating, painting, assembly protection. A section at the back covers plating-bath analysis methods.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12210

step up production with

STOW flexible shaft MACHINES

These dependable STOW FLEXIBLE SHAFT MACHINES save production time . . . speed up output . . . help lower production costs. Variable Speed Models shown are easily portable . . . cut down operator fatigue and increase on the job efficiency!

Constant Speed Models available. Also complete line of accessories designed to increase the utility of STOW Flexible Shaft Machines!

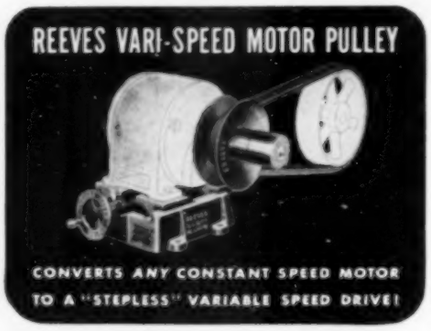
WRITE TODAY

for your free copy of CATALOG 51

STOW MANUFACTURING CO.
25 Shear St. Binghamton, N. Y.

If you write maker identify as IEN - 12211

REEVES VARI-SPEED MOTOR PULLEY



CONVERTS ANY CONSTANT SPEED MOTOR TO A "STEPLESS" VARIABLE SPEED DRIVE!

For Stepless Speed Adjustability Within 4:1 Range. Sizes to 10 Horsepower

1 Mount Your Motor on This REEVES Motor Base. Base includes sliding platform and handwheel for moving motor forward or back.

2 Apply This Disc Assembly to Motor Shaft. Consists of two cone-shaped discs, one sliding laterally, and compression spring.

3 Connect to Driven Machine with REEVES V-Belt. Place V-belt between discs and over pulley on power input of driven machine.

For complete details, send for FREE *Catalog IN 11c-G*

REEVES PULLEY COMPANY · COLUMBUS, INDIANA

Recognized Leader in the Specialized Field of Speed Control Engineering

If you write maker identify as IEN - 12212

AVAILABLE

PLEXIGLAS
LUCITE
ACETATE

SHEETS • RODS • TUBES

Cut to Size. Large or Small Quantities Shipped from stock

Our prompt service has made us a leader in this field

FREE CATALOGUE ON REQUEST

PLASTIC SUPPLY CO.
2901 N. GRAND BOULEVARD
ST. LOUIS 7, MO.

If you write maker identify as IEN - 12213

SWECO SEPARATORS

... are Engineered for Every Screening Need

- Efficient Single or Multiple Deck Screening
- Proved Greater Production Capacities
- From Coarse to as fine as 325 Mesh
- Wet or Dry Screening
- Low Cost Operation
- Unit Completely Self Contained with only Three Moving Parts
- Readily Adjustable Horizontal and Vertical Motion
- Clamp Ring Insures Rapid Screen Cloth Changes
- No Special Foundation, Supports or Base Required for Instant Production
- Production Separation with Laboratory Accuracy

Both Standard and Custom-Engineered Models Available

Write now for new 8-page catalog

SWECO
SEPARATOR DIVISION
SOUTHWESTERN ENGINEERING CO.
4800 Santa Fe Ave., Los Angeles 58, Calif.

If you write maker identify as IEN - 12214

NEW Safety Goggles

Now . . . 2 New
AO COVERGLAS GOGGLES
Fit Over Safety and Personal Glasses

AO's newest development in eye protection—Chippers' and Welders' Coverglas Goggles—can be worn over practically every pair of personal glasses (even the biggest frames) and most types of safety prescription goggles *with and without side shield.*

Wider vision, too, because the lenses are larger and scientifically designed to give up to 20% more vision. Yet, with all these features the goggles weigh but a fraction of an ounce more than ordinary Coverglas goggles . . . cost only slightly more.

These goggles are the newest . . . and two of the greatest . . . developments since the advent of safety goggles. Get all the facts about these two outstanding Coverglas goggles from your AO Safety Products Representative. He can supply you.

American Optical
SAFETY PRODUCTS DIVISION

Southbridge, Massachusetts • Branches in Principal Cities

If you write maker identify as IEN - 12215

How plant engineers make present machines safer and more automatic by installing MICRO *precision switches*

Here are typical installations of MICRO precision switches by plant engineers on present plant equipment to make machines safer, more automatic and more exactly suited to their production needs.

Prevents punch press from operation unless inching bar is removed

This MICRO die-cast enclosed switch is used to protect the operator of a punch press by preventing the machine from starting when the hinged guard is opened for insertion of the inching bar, used in setting up dies. When guard is opened, all power is automatically cut off.

Keeps screw machine shut off while operator feeds new stock

This MICRO roller-arm-actuated die-cast enclosed switch increases operator safety and prevents damage to a screw machine. It automatically shuts off the machine when either the bar support tube or spindle cover are moved to an open position.

Surface grinder won't operate unless magnetic chuck is turned on

This MICRO sealed die-cast switch prevents damage to surface grinder or stock and increases safety of operator. Arm installed on the shaft turns on the permanent magnet chuck which holds the stock in place. Driving motors cannot be started unless chuck is turned on.

MICRO distributors are located in over a hundred key cities to supply just the right switch to meet your plant application need. Look for your nearest distributor in your classified telephone book under "Switches, Electric."

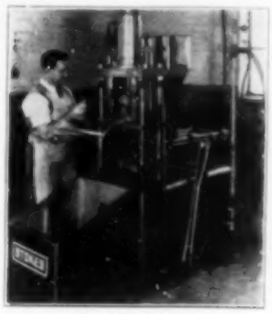
MICRO
MAKERS OF PRECISION SWITCHES
FREEPORT, ILLINOIS

A DIVISION OF
MINNEAPOLIS-HONEYWELL REGULATOR COMPANY

If you write maker identify as IEN - 12217

PLASTIC MOLDING . . Pneumatic press, automatic operation, rates 15 ton

Source: F. J. STOKES MACHINE CO.
5956 Tabor Road, Philadelphia 20, Pa.



Ask for Bulletin 513

Model 800 is a new air-operated toggle press that provides an automatic sequence of feeding, closing, holding, opening, and ejection to mold any thermosetting plastic material, including the alkyds. It provides a platen area measuring 10 by 6 in. and maximum daylight opening of 16 in. with the press closed. The stroke is 5 inches. The ejection stroke is 2¼ inches. The motor for the mechanical movement rates 2 hp. Air input requirements are ¾ hp. per stroke per min. at 100 lb. per square inch.

The press opens, following the predetermined curing or holding period, and the pieces that have been molded are raised on knockout pins so they stand free of their cavities. Immediately a comb moves forward to strip the pieces from the pins and discharge them to a receiver at the front of the machine. The comb movement is followed by the shuttle feed which takes material from a hopper and fills the mold cavities. The feed and comb then retract and the press closes to start another cycle.

Products for which the press in particularly suited include knobs, appliance parts, tube sockets, plugs. Cycle time is 5 sec. exclusive of curing. Protective devices stop the machine in the event of any interruption to the operation. Each step of the cycle depends upon completion of the preceding step.

If you write maker identify as IEN - 12218

SWITCH . . Cam operated design for turn and for push operation

Source: HETHERINGTON INC.
1214-18 Elmwood Ave., Sharon Hill, Pa.

Where space is limited

Series R-1000 with a turn knob and Series J-100 with a push button are new switches in the company's line of miniature single pole double throw equipment with rating at 10 amp. on 110-volt ac. Both assemblies operate a cam and roller contactor to open and close the circuits. The push design provides maintained contact action to open and close the circuit on successive operations of the button.

Contact surfaces are silver overlay on a copper base. An insulating spacer prevents arcing between terminals. The assembly is enclosed in an anodized aluminum housing. Overall diameter of the switch is ¾ inch.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12219

A Paid News Advertisement by Mathewson Machine Works

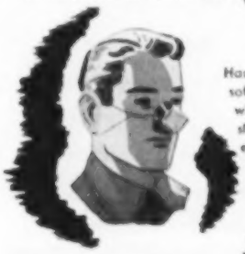
NEW ADJUSTABLE DRILL JIG eliminates layout; cuts drilling time

Used for drilling holes through round stock and hex stock from ¼" to 2" and cap screws from ¼" to 1¼", the new Mathewson Adjustable Drill Jig eliminates layout and can cut drilling time on small lots to a fraction. And it eliminates the costs of special jigs for larger quantities. Holes for cotter pins, set screws, drive pins for bayonet joints, oil holes in tubular sections, and wiring holes in cap screws, are all typical of the operation that can be done more economically with this jig. Hole diameters range from .062" to .531", using your A.S.A. standard slip bushings. The hardened V-block has two 60-degree V's for centering round or hexagonal stock, one for ¼" to 21/32" diameter, one for 21/32" to 2" diameter. Adjustable stop for locating work longitudinally for drilling any distance from end, may be used on either side. Adjustable bushing carriers hold slip busings and clamp work securely. Jig highly successful in permitting use of inexperienced drill operators. For circular write to: **Mathewson Machine Works,** 26 Hancock St., Quincy, Mass.

If you write maker identify as IEN - 12220

BE FRESH . . STAY FRESH

Wear a
Dupor no. 1
miniature NOSE MASK for Dust, Fumes, Paint Spray



Has 9 sq. in. filter. Mask is of soft rubber equipped with nose wire that's adjustable to any shape nose. Exhalation valve exhausts breathed air and keeps out unfiltered air. Handy as a pair of glasses. Complete panorama vision, no blind spots. Does not interfere with talking, eating, smoking. Fits the vest pocket. Weighs 1 oz.

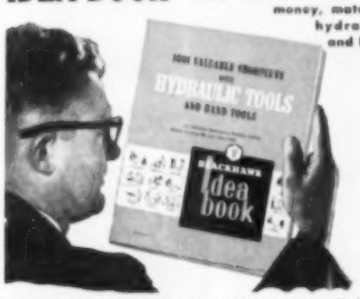
Sample sent $1.20 *ppd*

H. S. COVER, South Bend, Ind.

If you write maker identify as IEN - 12221

Announcing . . . great new 64-page BLACKHAWK IDEA BOOK

1001 shortcuts to save you time, money, materials with hydraulic tools and hand tools



Here's the greatest collection of ideas ever compiled on new uses for hydraulic tools and hand tools. IDEA BOOK gives you methods developed by hundreds of users of BLACKHAWK equipment . . . stimulates you to create your own ideas to solve special problems. So—*send for it!* You'll want to read every page—you may find a "gold mine" in any *one* picture.

BLACKHAWK MFG. CO., Dept. M-15112, Milwaukee 1, Wisconsin

WRITE TODAY FOR FREE COPY . . . FIND OUT HOW YOU CAN WIN BIG CASH AWARDS FOR ORIGINAL IDEAS USING BLACKHAWK EQUIPMENT

If you write maker identify as IEN - 12222

A superior transfer pump for HARD-to-HANDLE LIQUIDS

Do you have a liquid handling problem? This Tokheim DOUBLE ACTION hand pump may be the answer. FAST—delivers 20 gallons per minute of most liquids. HIGH VACUUM—lifts gasoline 20 feet. ADAPTABLE—for drums, skid tanks or underground installations—handles a wide range of liquids. Check the list below. Then call your Tokheim representative, or write the factory for literature.

A TOKHEIM WILL HANDLE—

Acetates, Alcohols, Aromatic Solvents, Chlorinated Solvents, Glycols, Ketones & Ethers, Petroleum Solvents, Plasticizers, Petroleum Products

Also Miscellaneous Liquids Such As:

Ammonia, Anti-Freezes, Castor Oil, Caustic Soda Solution, China Wood Oil, Creosote, Fresh Glycerine, Linseed Oil, Liquid Soap, Pine Oil, Pine Tar Oil, Soy Bean Oil, Styrene, Tung Oil, Turpentine, Water

Tell Us Your Problem

TOKHEIM DOUBLE-ACTION HAND PUMPS

General Products Division
TOKHEIM OIL TANK AND PUMP COMPANY
DESIGNERS AND BUILDERS OF SUPERIOR EQUIPMENT SINCE 1901
1654 WABASH AVENUE FORT WAYNE 1, INDIANA
Factory Branch: 1309 Howard Street, San Francisco 3, California

If you write maker identify as IEN - 12223

For Finest Pressure Atomization

DELAVAN SPRAY NOZZLES

TYPE WDA (hollow cone) or TYPE WDS (solid cone)

ARE IDEAL FOR . . .

Humidifying
Water Sprays
Process Spraying
Evaporative Coolers
Spraying Herbicides
Spraying Insecticides

There is a DELAVAN nozzle for every spraying requirement
WRITE FOR CATALOG 31

DELAVAN MANUFACTURING CO.
3009 SIXTH AVENUE
DES MOINES 13, IOWA

If you write maker identify as IEN - 12224

GET MORE PRODUCTIVE HOURS WITHOUT ADDED MANPOWER*

* with HYPRESSURE Jenny STEAM CLEANER

One man, using HYPRESSURE JENNY, can do more cleaning in a single hour than 10 men can accomplish in the same time by outmoded hand cleaning methods.

JENNY cleans anything—everywhere—machinery . . . tools . . . walls & floors . . . skylights . . . trucks . . . dock cars . . . and processing equipment of every description, in factories, mills, food plants, garages, repair shops, and on the farm. JENNY hates grease, muck and dirt—cleans right "down-to-the-bone." Saves up to 40% of mechanics' time, usually lost fighting dirt and grease on repair work.

Keeping house with JENNY pays valuable dividends in stepped-up production, fewer lost-time accidents, lower fire insurance premiums and increased personnel efficiency.

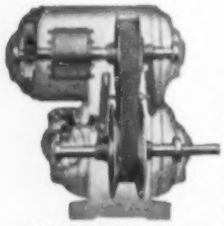
Write today for information packed booklet "1001 WAYS TO EXTRA PROFITS with HYPRESSURE JENNY STEAM CLEANER." It's yours FREE, and without obligation.

HYPRESSURE JENNY DIVISION
Homestead Valve Manufacturing Company
"Serving Since 1892"
P. O. BOX 83 CORAOPOLIS, PA.

If you write maker identify as IEN - 12225

MACHINE VERSATILITY & OUTPUT INCREASED

With Speed-Trol, we achieve maximum versatility and output for the machinery we manufacture for pipe production and special welding production problems, reports Mr. R. E. Stewart, of Cal-Metal Corporation, Torrance, Calif. On blasting equipment Speed-Trol compensate for varying amounts of rust to be removed. On continuous forming and welding equipment, Speed-Trol permits a single machine to accommodate a wide range of sheet thicknesses and pipe sizes.



STERLING SPEED-TROL

OUTSTANDING FEATURES: Infinite speeds—positive speed regulation—fingertip control—large indicator—positive pulleys—no springs—belt tension in proportion to load—protected—streamlined—Herringbone Rotor—through ventilation—versatile mounting—NEMA dimensions—shock absorbing—quiet operation—rugged—compact—dependable—long life.

70 ILLUSTRATIONS showing how Sterling Electric Power Drives reduce production costs. Write for Bulletin No. B-127.

STERLING ELECTRIC MOTORS

Plants: New York City 51; Van Wert, Ohio; Los Angeles 22; Hamilton, Canada; Santiago, Chile. • Offices and distributors in all principal cities.

USEFUL INFORMATION

(Continued)

If you write maker identify as IEN - 12226

MANAGEMENT . . Catalog of training films lists 700 motion pictures and slide films available

Audio-Visual Extension Service
17 Lexington Ave., New York 10, N. Y.

You can rent any of the 700 films listed in new 44-page catalog, "See-Hear Mr. Businessman" through the Extension Service of City College School of Business at the address above. The catalog indexes the films by general subject, then reviews each individually. Topics include business management, industrial training, production methods, safety, selling.

If you write maker identify as IEN - 12227

MANAGEMENT . . Electronic training service for your plant employees is described in new bulletin

Philco Corp.
Lehigh Ave. & 22nd St., Philadelphia 32, Pa.

New training equipment, instruction material and company's instructors are the three points described in new 22-page bulletin, "3 Dimensional Electronics Training". Equipment is based on a classroom demonstrator of typical unit circuit panels to show how even complicated equipment can be reduced to readily-understood basic circuits. Laboratory instruction classes give the trainee experience by actual work. The company is prepared to design a course to fit your needs.

If you write maker identify as IEN - 12228

METALS . . Technical reprint describes characteristics of design-strengthened metals

Rigidized Metals Corp.
664-P Ohio St., Buffalo 3, N. Y.

Six-page article from the literature has been reprinted and is offered on request under the title, "Design Characteristics of Textured Metals". The article describes the effect of design-strengthening "Rigidized" treatment of metal sheet, presents tables of tensile, rigidity, impact resistance properties, reviews fabrication recommendations, gives an application chart.

If you write maker identify as IEN - 12229

MOTORS . . Preventive maintenance of rubber-mill motors and controls in house publication

Electric Machinery Mfg. Co.
821 2nd Ave. S. E., Minneapolis 13, Minn.

E-M Synchronizer, company's house publication, includes an article on preventive maintenance in its recent Rubber Mill issue. The article tells how the maintenance department in a large rubber plant is organized, types of preventive maintenance on large motors and controls, shows sample reports.

If you write maker identify as IEN - 12230

PLANT SITES . . Booklet on Kansas City presents information on the city as an industrial site

Chamber of Commerce of Kansas City
1028-32 Baltimore Ave., Kansas City 6, Mo.

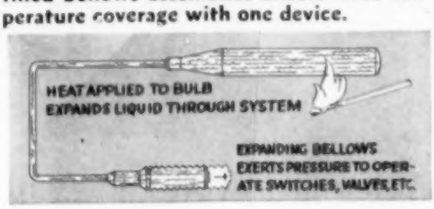
"Kansas City Offers Industry" is title of new 30-page booklet on the advantages of the city for industrial plant or warehouse location. It covers such points as labor, cost of living, mineral resources, transportation, fuels, power, utilities, weather, taxes, living facilities.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN - 12231

A PAID NEWS ADVERTISEMENT BY CLIFFORD MFG. CO.

TEMPERATURE CONTROL . . . Liquid filled bellows assemblies enable wide temperature coverage with one device.



Clifford liquid filled bellows assemblies operating on the principle illustrated above permit accurate, remote control over a wide temperature range with one device. Bellows movement is closely proportional to the temperature range throughout the system's entire operating range. Differential required to operate a device is directly related to the temperature range to be controlled.

Versatility of these bellows assemblies permits use with low or high temperatures, and includes such applications as domestic stoves (gas or electric), steam processing apparatus, kilns, ovens and other industrial equipment. The company offers engineering aid in designing systems to meet your particular temperature control requirements.

Clifford flexible, leakproof, metallic bellows assemblies are also used to: (1) seal rotary shafts or packless valves against liquid or gas leakage; (2) transmit motion hydraulically to remote points; (3) provide for thermal expansion; (4) provide shock mountings or vibration dampening; (5) permit motion in a vacuum. To designers interested, the company offers reprints of the *Product Engineering* article: "What to Consider When Selecting A Metallic Bellows."

CLIFFORD MANUFACTURING COMPANY
146 Grove St., Waltham 54, Mass.
Division of Standard-Thomson Corporation.

If you write maker identify as IEN - 12232

Precision Weighing Cuts Production Costs . . .

THERE IS NO SUBSTITUTE FOR EXACT WEIGHT

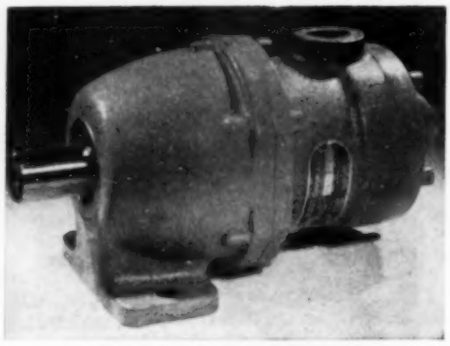
Precision scales correctly fitted to the operation have a big place in controlling costs. A few years ago precision scales performed but a few simple operations. Today engineers have increased their use until thousands of operations are now done by simple weighing. Such operations as parts selection, motor laminations, classifying lengths of carbon, sealing gauges are just a few things done with scales. Since operations like these, and hundreds of others, are precision in nature they require highly accurate equipment. EXACT WEIGHT Scales have been preferred in industry for more than thirty-five years . . . used by the biggest corporations as well as the smallest firms. Write for full details.

EXACT WEIGHT SCALES
BETTER QUALITY CONTROL
BETTER COST CONTROL

THE EXACT WEIGHT SCALE COMPANY
932 W. Fifth Avenue, Columbus 8, Ohio
2920 Bloor St., W., Toronto 18, Canada

If you write maker identify as IEN - 12233

DUDLEY "NUTATING PLATE" OIL HYDRAULIC PUMPS AND MOTORS



SERIES 625 — 1½ to 11¼ GPM
POSITIVE DISPLACEMENT PISTON TYPE
0 to 1,000 PSI

Built for heavy duty, with higher efficiency and longer life. All moving parts are full-floating. No gears; no vanes; no cams or ball joints. Self-adjusting for all viscosities, temperatures and pressures.

EASTMAN PACIFIC COMPANY
2320 East 8th Street • Phone TRinity 6317 • Los Angeles 21

If you write maker identify as IEN - 12234

"GUNITING" with Super ADACHROME-CAST

Tradename "Guniting" courtesy Cement Gun Co., Allentown, Pa.

. . SAVES OUTAGE TIME and MONEY

Use SUPER ADACHROME-CAST to gunite your stud tube water walls.—Fine-grained to penetrate the small apertures between studs.—packs to a dense mass when shot. One user reports SUPER ADACHROME-CAST lasted twice as long and took but one-third the time to apply as compared with a plastic chrome ore installation.

Excellent for coating brickwork when free of slag.

Yours, *FREE* for the asking . . . an illustrated, detailed Bulletin on *Super* ADACHROME - CAST

BOTFIELD REFRACTORIES
784 South Swanson Street, Philadelphia 47, Pa.
In Canada, Canadian Botfield Refractories Co., Ltd., 171 Eastern Avenue, Toronto

If you write maker identify as IEN - 12235

Chem-Board Tote Boxes HELP ARMAMENT PROGRAM

All kinds of materials, parts and sub-assemblies are flowing to production lines efficiently and economically in Convoy Chem-Board Tote Boxes to speed the armament program in plants from coast to coast.

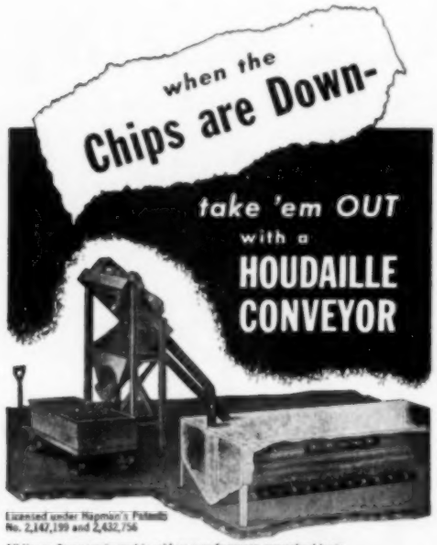
Chem-Board is made of corrugated fibro-board, chemically impregnated by Convoy's exclusive process. It is flint hard and rock strong. It is not weakened by moisture. It is impervious to machine oils. Convoy Tote Boxes cost and weigh 50% to 60% less than steel.

The lightness, toughness and economy of Chem-Board Tote Boxes are unmatched. Tell us the style you use . . . we'll send a free production sample from the next run for you to test. As a guide for present and future availability, our current production capacity is reserved for the unprecedented demands from old customers and "DO" orders. Orders rated DO-MRO are acceptable. Write today.

Standard and Custom-made Nesting — Stacking — Vertical CHEM-BOARD TOTE BOXES

CONVOY, INC.
P. O. Station B, Box 216-1
CANTON 6, OHIO

If you write maker identify as IEN - 12236



Licensed under Hagman's Patents No. 2,147,199 and 2,432,756

All Honan-Crane equipment is sold on a performance guaranteed basis.

In this large motor car plant, Houdaille Enclosed-Flight Conveyor continuously removes chips from pit beneath twin banks of Bausch 12-Station Transfer Drilling Machine. Chips are deposited into portable hopper for disposal. Houdaille Conveyor is ideal for removing small material from confined areas. This installation paid for itself out of savings in one year.

Automatic System Solves Difficult Chip and Sludge Removal Problems . . . Cuts Costs, Speeds Production

Houdaille Conveyor's automatic loading and continuous materials transport handles any solid or fibrous waste (chips, abrasive sludge, scale, etc.) which settles to the bottom of a tank or hopper. Many plants of all sizes, in many types of operation, have saved substantially on labor, maintenance, down-time and other production costs by installing one or more Houdaille Conveyor systems.

Check these important Houdaille advantages:

- Eliminates costly manual cleaning and handling methods
- Operates continuously or intermittently as needed without shutting down productive machinery
- Readily adaptable to almost any need, any space or traverse requirement . . . ideal for restricted areas
- Dependable, trouble-free automatic operation; requires little or no maintenance attention; quickly pays for itself out of savings.

Write for complete information and case histories. Honan-Crane Engineering Service is available.

HONAN-CRANE CORPORATION
802 Wabash Avenue, Lebanon, Indiana
subsidiary of HOUDAILLE-HERSHEY CORP.

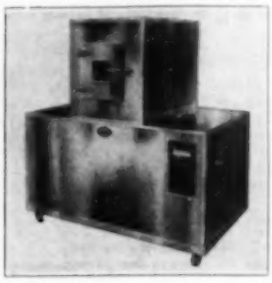
WORLD LEADING OIL FILTER MANUFACTURER

IN CANADA:
E. W. Playford, Ltd., Montreal 28
W. E. Micklethwaite, Toronto 18
Cummins Guelleroth, Ltd., Edmonton, Alta.

If you write maker identify as IEN - 12238

TESTING . . Temperature cabinet also can vary humidity and pressure

Source: WEBBER APPLIANCE CO.
2738-42 Madison Ave., Indianapolis 3, Ind.



For mechanisms, equipment

Service conditions in a temperature range between minus 100 and plus 250 deg. F. can be set and controlled in the 20 by 20 by 20-in. test chamber that forms an integral part of this new Model A-4 ½-100FHH equipment. Temperature can be cycled from ambient to minus 100 deg. F. in 45 min. and back from minus 100 deg. F. to plus 200 deg. F. in 30 minutes. Humidity is regulated by a wet and dry bulb controller that provides 90 percent relative humidity at temperatures between 75 and 95 deg. F. Vacuum equipment can be added to stimulate high altitude conditions.

An operator observes work in the test chamber through a multi-paned port. The chamber interior is illuminated by a moisture proof lighting fixture. Electric lines lead through apertures in one side so equipment under test can be operated. Overall dimensions are 60 by 45 by 74 in. including the main refrigerating equipment housing that forms the base.

If you write maker identify as IEN - 12239

VISE . . Pneumatic assembly to center and hold cylindrical work

Source: BLACK DRILL CO.
1378 E. 222nd St., Cleveland 17, Ohio

Controlled by user's pneumatic valve

Centr-Finder is a new vise in which each of the jaws is operated by a pneumatic cylinder in connection with a mechanism that limits the jaw movement to an equal amount on each side of center. Cylindrical work, in any diameter large enough to be held by the faces of the vees in the jaws, to a maximum of 4 in., will be brought to center within 0.001 in., both horizontally and vertically, when air pressure is applied from a shop line.

Pressure range is between 5 and 100 lb. depending upon the force required at the jaws. Clamping pressure to 2,000 lb. can be obtained. Force exerted by the jaws is in a straight line from the pneumatic cylinders. No pressure is transmitted through the equalizing mechanism as its only function is to guarantee uniformity of the jaw travel between open and closed positions. Each jaw is independently adjustable from the center line. False jaws can be added when required.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12240

SEND FOR YOUR FREE COPY

NEW ACME BUSHING CATALOG

Contains America's LARGEST BUSHING Selection

Features 2 Standards
A.S.A. Standard *Plus* Acme Standard

Makes Bushing Procurement Easy . . . Fast! Send For Your FREE Copy Now!

Simplifies, speeds bushing selection. Packed with valuable data. Saves you time and trouble. Also includes liners, leader pins, dowel pins, locating jigs, etc.

Serving Industry For 28 Years

ACME INDUSTRIAL COMPANY
215 N. Laflin St., Chicago 7, Illinois

MANUFACTURERS OF DRILL JIG AND FIXTURE BUSHINGS

If you write maker identify as IEN - 12241

MECHANICAL MUSCLES WHICH ELIMINATE THE NEED FOR EXTRA HANDS — EXTRA TRIPS

PORTELVATOR
HANDY HAMILTON
PORTABLE ELEVATING TABLE
LIFTS — LOWERS — LEVELS
TRANSPORTS

learn the penny-pinching particulars, write for this
FREE BULLETIN NO. P-505

The Hamilton TOOL COMPANY
905 HANOVER STREET • HAMILTON • OHIO • U • S • A

If you write maker identify as IEN - 12242

the Height of Sanitation

BRADLEY DUO-WASHFOUNTAINS

Bradley DUO-Washfountain with sanitary foot-control operation.

Where nature of work requires sanitary wash facilities that allow thorough cleansing, Bradley DUO-Washfountains are first choice.

The Bradley DUO is foot-controlled. There are no faucets to touch or maintain. Each DUO serves two individuals simultaneously yet requires only half the plumbing connections needed for ordinary wash-basins . . . . . BRADLEY WASHFOUNTAIN CO., 2219 W. Michigan Street, Milwaukee 1, Wisconsin.

Full information is contained in Catalog B-711. Write today for your copy.

BRADLEY Duo washfountains
Distributed Through Plumbing Wholesalers

If you write maker identify as IEN - 12243

If you write maker identify as IEN - 12244

Why STAINLESS STEEL construction gives you better gas unit heating

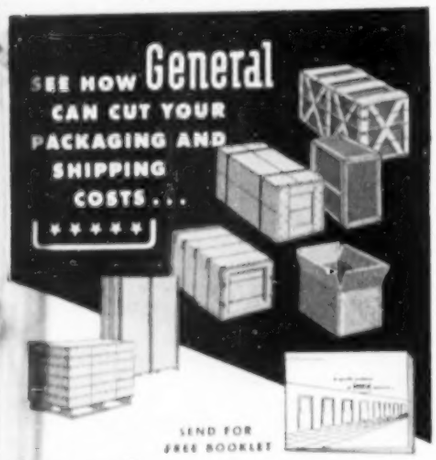
- LONGER LIFE!
- LOWER INSTALLATION COST!
- ALL TUBES HEAT EVENLY!
- HEAT IN 5 SECONDS!
- BALANCED HEATING!
- MAXIMUM EFFICIENCY!
- EASY SERVICING!

ONLY Modine builds gas-fired unit heaters with full stainless steel heat exchangers and burners! That's why only Modine combines so many heating extras in a single unit. And, remember, Modine is the greatest name in unit heating. As a leader in this field for more than 25 years, Modine gives you perfect heating comfort plus maximum fuel economy. Important, too — Modine offers you either steam or gas units. Your assurance of an impartial approach—based on your exact needs.

GET THIS FREE BOOK! See the Modine representative listed in your classified phone book or write Modine Mfg. Co., 1503 DeKoven Ave., Racine, Wisconsin.

Modine UNIT HEATERS

If you write maker identify as IEN - 12245



General BOX COMPANY

GENERAL OFFICES:
1815 MINER STREET, DES PLAINES, ILL.

DISTRICT OFFICES AND PLANTS: Cincinnati, Danville, N. J., Detroit, East St. Louis, Kansas City, Louisville, General Box Company of Mississippi, Meridian Miss., Milwaukee, Sheboygan, Winchendon. Continental Box Company, Inc.: Houston, Dallas.

If you write maker identify as IEN - 12246

Count Anything—Anywhere

parts, sheets, bottles, cans, boxes—measure lengths of wire, rope, tape.

STOP GUESSWORK — Eliminate labor and error of hand counting.

PIC makes electric counters for every purpose. Standard, dustproof and panel-mounting heavy duty types, small, low cost types, automatic batch counters, complete line of electric counter actuators. Tell us what you want to count or send for catalog.

PRODUCTION INSTRUMENT COMPANY
700-10 W. Jackson Blvd., Chicago 6, Ill.

USEFUL INFORMATION

(Continued)

If you write maker identify as IEN - 12247

PLANT SITES . . Questions to consider in location of a new plant are set forth in booklet

Walter Kidde Constructors Inc.
140 Cedar St., Room 2113, New York 6, N. Y.

Sixty-four questions to think about when planning plant expansion or a new plant are listed in new 8-page booklet, "Factors Influencing Industrial Plant Location". They are grouped under topics of production materials, marketing, transportation and distribution, labor, supervision, utilities, bank facilities, laws and taxes, community attitude towards industry, living conditions, climate, national defense.

If you write maker identify as IEN - 12248

POWDER METAL PARTS . . Design information and a number of examples are given in new 32-page manual

New Jersey Zinc Co.
Front & Maiden Lane, New York 38, N. Y.

First of two parts in new "Facts about Pressed Brass" is intended as a guide to design, properties and production of parts based on the company's metal powders. The booklet, available on letterhead request, answers questions from how big to what cost. Second part presents analyses of 24 application examples including original designs and conversions.

If you write maker identify as IEN - 12249

REFRACTORIES . . Illustrated methods of using refractory walls and arches in furnaces

M. H. Detrick Co.
109-13 W. Washington St., Chicago 2, Ill.

"Heat Enclosure Methods" is title of new 32-page book, available on letterhead request, that uses color pictures to trace development of the refractory arch, sectionally-supported walls, refractory materials, and show modern practice for each. It describes engineering fundamentals of furnace enclosures, presents heat transfer and other data, uses cut-away views to show how the refractory shapes interlock.

If you write maker identify as IEN - 12250

RESEARCH . . Facilities and scope are shown for research and development organization in new booklet

Applied Science Corp. of Princeton
P. O. Box 44-A, Princeton, N. J.

Fields of operation are described and examples shown where permissible in new 12-page booklet, "Remote Measurement and Automatic Data Conversion", dealing with the company's organization. Radio instrumentation of moving vehicles, remote measurement of process and other variables, upper atmosphere investigation are examples.

If you write maker identify as IEN - 12251

SEALING . . Cardboard slide selector for O-rings by installation dimensional requirements

Plastic & Rubber Products Co.
2102 Hyde Park Blvd., Los Angeles 47, Calif.

"O-Ring Data Chart" is new 3½ by 9½-in. slide selector on Series 6227 and 6230 O-rings, one series on each side. A dimension drawing on each side refers to windows in the selector face. The slide is moved so the recommended designation for the company's O-ring appears at a window in line with figures for the corresponding dimensions.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12252

Hardness Readings in 2 seconds!

Webster PORTABLE Hardness Testers FOR NON-FERROUS METALS

Tungsten carbide differing in sensitivity for rapidly testing hardness of aluminum, brass, copper, etc. No training required; one hand operation. Hardness readings in 2 seconds anywhere in shop. Can be correlated to standard hardness scales. Quick reading dial. Special anvil design tests all shapes: sheets, extrusions, tubing, strip stock. Capacity ½". Simple, rugged design, easy maintenance.

MODEL B Direct hardness readings on all aluminum alloys.

MODEL B-75 Direct hardness readings on copper, brass, etc.

WEBSTER INSTRUMENT Inc. DEPT. N 11856 Mississippi Ave. LOS ANGELES 25, CALIFORNIA

If you write maker identify as IEN - 12253

MATOT "DUMB WAITERS"

Space, time, labor and related savings are practically unlimited with MATOT "Not-so-dumb" dumb waiters—in factories, stores, institutions, hotels, restaurants—and also *in the home*. A MATOT dumb waiter takes up little room, requires comparatively light construction and can be hand or power operated—at minimums of both effort and current. See comprehensive SWEET'S CATALOG FILE, or write for free data.

D. A. MATOT, Inc.
1533 W. Altgeld St., Chicago 14, Ill.

If you write maker identify as IEN - 12254

Production Soldering BETTER JOBS FASTER more Economically

Save Labor, Solder . . . Increase Production

This new MOGUL unit is built to deposit silver, lead, and tin base solders in a liquid or semi-liquid form . . . faster, cleaner . . . to any constant moving part. This new automatic soldering gun replaces the soldering bath, hand soldering, and in many cases, expensive fixtures. Quickly adapted to various size parts. Adjustable to speed of work . . . gives pin-point location for cleaner seams.

BETTER WORK APPEARANCE

Deposits solder or brazing wire to the exact spot for cleaner seams. This new MOGUL soldering gun is now in wide use, saving time and money, increasing production, and turning out a better-looking product.

Write today for new MOGUL SOLDERING GUN bulletin

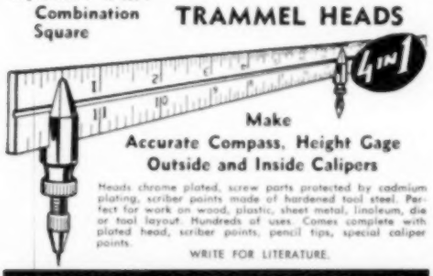
METALLIZING COMPANY OF AMERICA
Dept. IEN • 3520 West Carroll Avenue
Chicago 24, Illinois
Telephone: SAcramento 2-3710

If you write maker identify as IEN - 12256

Used by Leading Draftsmen and Designers for INKING and PENCIL DRAFTING

A fine precision tool. Hair-line adjustment quickly made and maintained by spring-loaded knurled thumb rollers. No screws or clamps. Lead expeller for easy control of lead length. Slides instantly interchangeable to any beam length. Made of anodized aluminum, stainless satin finish. Beam lengths from 7" to 100".

Combination Square **TRAMMEL HEADS**



Make Accurate Compass, Height Gage Outside and Inside Calipers

Heads chrome plated, screw parts protected by cadmium plating, scriber points made of hardened tool steel. Perfect for work on wood, plastic, sheet metal, linoleum, die or tool layout. Hundreds of uses. Comes complete with plated head, scriber points, pencil tips, special caliper points.

WRITE FOR LITERATURE.

ENGINEERING RESEARCH ASSOCIATES, INC.
3475 East Nine Mile Road Hazel Park, Michigan

If you write maker identify as IEN - 12257

YOU'RE PAYING $100,000,000 FOR DERMATITIS

Amazed? That's the annual cost to industry. $100,000,000. Compensation and medical care for the average case is $200. Plus, further hidden costs — absenteeism, replacement training, sacrificed quality, lowered morale, lost production. All, needless expense. *Because dermatitis can be controlled!*

How? With West's simple, inexpensive prevention and control program that (1) makes sure of personal cleanliness (2) protects exposed skin areas (3) prevents clothing contamination (4) guards against special hazards.

The WEST Dermatitis Control Program is based on an in-*your*-plant survey — made without obligation or inconvenience to you. A West representative will be glad to give you details.

FREE BOOKLET! *Write for your copy of West's new Dermatitis Control Booklet.*

WEST DISINFECTING *Company*

42-16 WEST STREET, LONG ISLAND CITY 1, N. Y.

If you write maker identify as IEN - 12259

CONTROL . . Electronic instrument holds temperature at adjustable point

Source: TACO WEST CORP.
515 N. Noble St., Chicago 22, Ill.

Controls current flow

Portable instrument has been added to the company's Gardsman line to provide a unit that can be carried readily and plugged in for temperature control application on equipment in a plant. It serves to operate a relay which acts through an integral 1,700-watt contactor to open and close a load circuit. Three models include one with "on-off" action, a second with proportioning control and a third serving either as a high limit control or an "on-off" control depending upon the application.

The instrument is plugged into a source of 110-volt 60-cycle ac. and into the electrically heated equipment to be controlled. Its thermocouple is inserted into the oven, bath, or thermocouple wall where control temperature is to originate. This temperature will be indicated by the upper pointer in the instrument housing. It can be controlled at any desired point upon setting the lower pointer to the correct scale position by turning an external knob on the housing face.

Two power outlets provide control not only for temperature but also for other equipment such as blowers, fans, agitators. A dual scale range is from 50 to 500 deg. F. employing an iron-constantan thermocouple and 0 to 2,000 deg. F. with a chromel-alumel couple. One couple of each design is included as standard equipment. Pilot lights indicate whether heat is being supplied to the controlled equipment or if it is cooling.

If you write maker identify as IEN - 12260

PUMP . . Rotary hand design to transfer hazardous liquids safely

Source: PROTECTOSEAL CO.
1918-22 S. Western Ave., Chicago 8, Ill.

It is safe to use

Three arrestors are integral parts of this new pump to stop flame travel in transfer of flammable liquids from drums to smaller containers. They are located at the delivery spout, the bung adapter and the strainer inlet on the suction tube that lies inside the drum. Protected openings, in addition, provide for vent and pressure relief. The construction is tested and approved by Underwriters' Laboratories Inc. for its intended service.

The assembly includes the self-priming pump with rating at 5 gpm., the spout with threaded hose connection, the bung adapter and telescopic tube for application in the side or end openings of 30 and 55-gal. drums.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12261

SPECIAL SUPER PRECISION BALL BEARING GAGES — ACTUAL SIZE

"Tops them all" and SAVES 90% OF COSTS WITH RAYTHEON WELDPOWER®

Attaching small steel balls to these special gage shanks presented a problem — until the Barden Corporation of Danbury, Conn. applied a Raytheon WELDPOWER Unit to this delicate job. Now steel balls, ranging in size from 1/8" to 1/4" in diameter, are quickly, cleanly and accurately welded — yet easily removed when necessary without damage to the shanks. The 90% savings per year equals the cost of the Unit itself, proof that WELDPOWER pays its way over and over in time saved, better production and fewer rejects.

Learn the many advantages of joining ferrous, non-ferrous or dissimilar metals with Raytheon Condenser Weldpower Control Units. Available in 3 sizes with appropriate Weldpower Heads.

Send sample parts or write for details to Dept. 6270-IN-11

RAYTHEON

RAYTHEON MANUFACTURING COMPANY
Equipment Sales Division, Waltham 54, Mass.
DISTRICT OFFICES: Boston • New York • Cleveland • Chicago • New Orleans • Los Angeles (Wilmington) • San Francisco • Seattle
INTERNATIONAL DIVISION: 19 RECTOR STREET, NEW YORK CITY

If you write maker identify as IEN - 12262

"Buffalo" "CB" BLOWERS put on the pressure in "tight" spots!

Yes, these efficient "Buffalo" pressure units give you up to 2¼ lbs. pressure in a minimum of space. They have been industry-proven as gas exhausters, line boosters and countless other high-pressure, moderate volume air applications. Now "Buffalo" "CB" Blowers have been improved in strength, size and weight for more efficient operation than ever. Available in 150 to 5000 c.f.m. sizes. Write for Bulletin 3553-A today!

BUFFALO FORGE COMPANY
496 BROADWAY • BUFFALO, NEW YORK
Publishers of "FAN ENGINEERING" HANDBOOK
Canadian Blower & Forge Co., Ltd., Kitchener, Ont.
Sales Representatives in All Principal Cities

"Buffalo" "CB" BLOWERS

If you write maker identify as IEN - 12263

GE TIME SWITCHES ...via Graybar

Synchronous, Telechon-motor drive provides reliable automatic operation

Type T-27 — for general purpose use
230 volt A.C. unit is equipped with removable and adjustable riders to facilitate settings. Can be furnished with skip-a-day omitting device. Available in 60, 50, and 25-cycle ratings.

Type TSA-14 — for control of repeating cycles
Timer permits operation without respect to time of day. "On" time can be varied between 1 and 99 per cent of total time cycle.

Type TSA-10 — for process timing
Unit is ideal for operation of electrically operated machines. It is readily adjusted over a wide range of operating cycles. Resetting is automatic, and unit can be supplied with either normally open or normally closed contacts.

For complete information on G-E Timers check with your local Graybar Representative. *Graybar Electric Co., Inc., Executive offices: Graybar Building, New York 17, N. Y.* 213-1211

Call Graybar *first* for . . . Everything Electrical Graybar Electric Company

If you write maker identify as IEN - 12264

Like hundreds of other industrial plants, Morrison Products Company has discovered that "Bear" Dy-Namic Balancing Machines attain high standards of accuracy at favorable production rates and with minimum capital investment. Reduce noise, vibration, friction, bearing failure thru Dy-Namic Balancing. **FREE MANUAL** shows how! Write: Bear Mfg. Co., Dept. I-5, Rock Island, Ill.

"BEAR"
STATIC AND *DY-NAMIC BALANCING* MACHINES
balance rotating parts weighing from 4 oz. to 8 tons

If you write make identify as IEN - 12265

MARSH INSTRUMENT CO.
Sales affiliate of Jas. P. Marsh Corp., DEPT. A, SKOKIE, ILL.
Export Dept., 155 East 44th Street, New York, New York

If you write make identify as IEN - 12266

Users of Resistance Welding Need This NEW Big Book

Here, at last, is a catalog designed for a busy man to use — good, clear illustrations with contours and dimensions plainly shown — well-organized listings with prices right alongside the specifications.

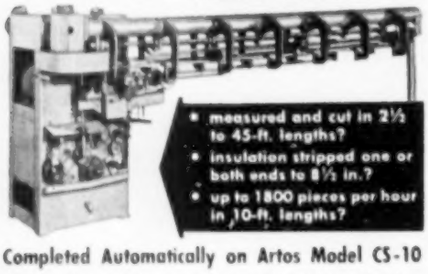
Nearly 700 resistance welding electrodes are listed for almost any welding job. The catalog also lists water-cooled holders of every style and size, seam welding wheels, alloy rod and bar stock.

If you do resistance welding, you need this book. Write for your free copy today.

WEIGER-WEED W·W
Weiger-Weed & Company, Division of Fansteel Metallurgical Corporation, 11644 Cloverdale Avenue, Detroit 4, Michigan

If you write make identify as IEN - 12267

Do you need this CAPACITY TO PRODUCE FINISHED WIRE LEADS



- measured and cut in 2½ to 45-ft. lengths?
- insulation stripped one or both ends to 8½ in.?
- up to 1800 pieces per hour in 10-ft. lengths?

Completed Automatically on Artos Model CS-10

Now you can get high production of insulated wire leads — accurately measured, cut in lengths up to 45 ft., and stripped at one or both ends. Leads are finished complete and collected in one fast, automatic cycle.

This Artos machine will handle wire, cord and cable up to No. 10 stranded or No. 12 solid. Consistently uniform results are obtained without cutting strands or nicking solid wire. Insulation may be stripped from 2 in. up to 8½ in. at one end and 8½ in. at the other. You can also slit parallel cord or remove the outer jacket on SJ appliance cords.

Inexperienced help can handle an Artos without trouble. Set-ups are quickly changed for different cut lengths and stripped lengths.

Write for this Free Bulletin
Get the complete story—write now for Bulletin 40 on the Artos Model CS-10.

Automatic Wire Cutting and Stripping
ARTOS ENGINEERING CO.
2749 S. 28th St. • Milwaukee 46, Wis.

USEFUL INFORMATION

(Concluded)

If you write make identify as IEN - 12268

SILICONES . . Revised information on silicone rubbers for a variety of applications

Dow Corning Corp.
P. O. Box 592-A, Midland, Mich.

"Silastic Facts No. 10-A" titles new 16-page bulletin of recently revised information on Silastic silicone rubber. It describes properties and limitations, together with applications in gaskets, seals, diaphragms, hose, mechanical parts, electrical insulation and other uses.

If you write make identify as IEN - 12269

TRUCKS . . Operator instruction manual uses cartoon-style drawings and condensed text

Hyster Co.
2616 N. E. Clackamas St., Portland 8, Oregon

Results of a 2½-year study are presented in new 24-page letter-size manual, "How to Operate a Lift Truck", which the company will send on request while the supply lasts. It covers essentials of truck purpose and design, shows how to operate a truck, presents safety rules, basic maneuvers, pallet types and handling, maintenance.

If you write make identify as IEN - 12270

TUBES . . Suggestions on selection of seamless mechanical steel tube in new bulletin

Babcock & Wilcox Co.
4027-31 Fourth Ave., Beaver Falls, Pa.

Bulletin TB-340, 4 pages, is intended as a guide to the use of seamless mechanical tube. It describes hot-finished, cold-drawn and Roto-Rocked types as to manufacture, surface finish, dimensional tolerances, machinability. It concludes with an offer to assist in selection, lists information necessary.

If you write make identify as IEN - 12271

WELDING . . Instruction booklet describes how to weld corrosion-resisting steels

Lincoln Electric Co.
22803 St. Clair Ave., Cleveland 17, Ohio

New 32-page booklet is a partial reprint from the company's Procedure Handbook of Arc Welding. It carries the title, "Welding with Stainless Steel Electrodes". List price is 25 cents. It describes procedures for chromium-nickel and straight chromium steels, lists analyses, problems involved.

If you write make identify as IEN - 12272

WIRE ROPE . . Pocket instruction manual on how to handle, seize, splice and apply wire rope

A. Leschen & Sons Rope Co.
5907-11 Kennerly Ave., St. Louis 12, Mo.

Manual C-51, "Use and Care of Wire Rope", contains 72 pages of information and suggestions based on the company's experience. It deals with such subjects as storing, unreeling, seizing and cutting, attachment of sockets, clips, size and condition of drums and sheaves, splice types and procedures, lubrication, stretch, reeving, slings, calculations, specifying.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write make identify as IEN - 12273

SPEED PRODUCTION • CUT COSTS ELIMINATE SHRINKAGE...

Resistance Spot Welding & Soldering Machines

Models 1000 WV, 2000 WV & 5000 WV—AC only

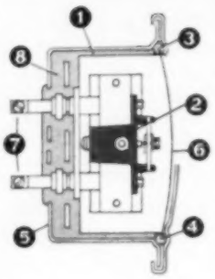
For hard soldering, soft soldering and spot welding precious and dissimilar metals. Spot welds steel parts up to 5/16 of an inch thick; welds brass up to .080"; solders brass up to ¼ of an inch. Has myriad applications in small metal parts production.

Write for catalog of complete line.

JOYAL PRODUCTS, INC. 568 BELMONT AVENUE NEWARK 3, N. J.

If you write make identify as IEN - 12274

Available NOW! RUGGEDIZED METERS to meet Sig. C. Spec. MIL-M-10304



8 PLUS Features

Extra "Ruggedized" Features

1. Movement stuck-mounted and housed in rubber-lined case.
2. Movement supported by die-cast frame for strength and accuracy.
3. Glass rubber-grommeted and sealed to rubber lining of case.
4. Non-rigid mounting of glass increases resistance to shock.
5. Each meter designed and built to highest quality standards.

Extra Installation Advantages

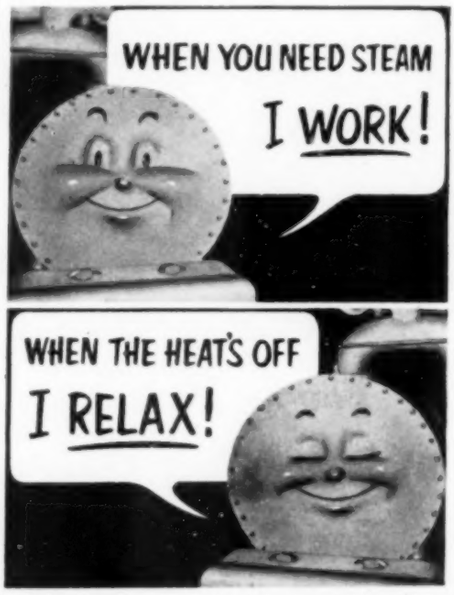
6. Slight convexity of glass reduces chance of accidental breakage.
7. Terminals tapped and provided with binding screws to facilitate wiring.
8. Damage in wiring reduced by non-rigid mounting of terminals and flexible conductors.

Building rugged electric meters is not new to SUN . . . For over 20 years the automotive industry has depended on SUN as one of the largest "D'Arsonval-type" meter manufacturers—to produce rugged, tough meters for portable field instruments. SUN "Ruggedized" Meters not only meet Specification MIL-M-10304 (Sig.C.) —but also embody many *plus* features that make installation easier and faster. "Ruggedized" Meter Data Bulletin on request.

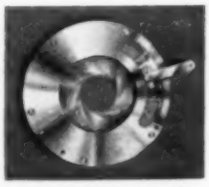
SUN "Ruggedized" Meters are available as D-C Volt Meters, Ammeters, Milli-ammeters and Micro-ammeters and also may be ordered as rectifier type A-C instruments.

SUN ELECTRIC CORPORATION
6387 Avondale Avenue, Chicago 31, Illinois

If you write make identify as IEN - 12275



STEAM-PAK GENERATORS AUTOMATICALLY REGULATE OPERATION TO LOAD DEMAND



Steam-Paks, the modern steam generators, built by York-Shipley, regulate themselves automatically by load demand, furnishing steam or hot water when required. The Iris Shutter air control (upper right) and Metering Oil Pump (lower right) supply the correct amount of air and oil as required by load demand. This means highest combustion efficiency, lower operating costs. Steam-Paks cover the full range from 15 to 300 hp. for low or high pressure steam or hot water and are fired by oil, gas, or a combination of oil and gas.

GET YOUR COPY OF THIS MANUAL TODAY!

"Steam in a Package" — a 14 page book which tells the installation and operating advantages of York-Shipley Steam-Pak Generators. Write today for your free copy of Bulletin 201.

YORK-SHIPLEY, INC., YORK 13, PA.

If you write maker identify as IEN - 12277

EX-CELL-O BUSHINGS

On the Job!

Shown above is a jig illustrating the use of Ex-Cell-O Drill Jig Bushings. Note the various types—headless press fit, head type press fit, and slip renewable bushings—three of the many types carried in stock and described and pictured in Ex-Cell-O's bushing catalog—yours for the asking—Bulletin 35371.

XLO

51.29

EX-CELL-O CORPORATION
DETROIT 32, MICHIGAN

If you write maker identify as IEN - 12278

PUT THIS 52-PAGE CATALOG TO WORK FOR YOU

Shows how to cut costs with unique thermostat . . . gives detailed explanation of installations . . . pictures wide variety of applications . . . a *fact-filled* guide.

Send today for your copy of this 52-page catalog on Fenwal THERMOSWITCH thermostats.

Learn how you, too, can cut costs in controlling humidity, radiant heat, pressure, vapor level, or other variables dependent on temperature.

Catalog gives complete explanation of the unique operating principle of Fenwal controls. Includes schematic diagrams — detailed breakdown of specific features — instructions on checking system under operating conditions — an entire section on selection and application of THERMOSWITCH controls.

Detailed specifications on all Fenwal products include modifications, special features, exact installation instructions with diagrams on installation — plus photographs of installations illustrating wide variety of applications.

You will find the Fenwal Catalog #400 a gold mine of helpful information. For your free copy, simply write Fenwal, Incorporated 711 Pleasant Street, Ashland, Massachusetts.

Fenwal

THERMOSWITCH®

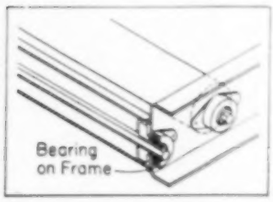
Electric Temperature Control and Detection Devices

SENSITIVE...*but only to heat*

If you write maker identify as IEN - 12280

CONVEYING . . Gravity roller design with bearings in frame for hot loads

Source: LOGAN CO.
276 Cabel St., Louisville 6, Ky.



Ask for Chart R-13

The company announces new construction, added to its line of gravity roller conveyors, for application when hot loads are to be handled. For this purpose the ball bearings have been moved out from their normal position within the ends of the rolls to bracket assembly on the outside face of the conveyor frame. In this position they are not subject to heating to the extent that they would be inside the rolls.

The construction can be supplied in rolls ranging from 1.9 to 5 in. in diameter, for load capacities from 150 to 10,000 lb. per roller. Loads can be handled with temperature as high as 1,000 deg. F. in the new conveyor design.

If you write maker identify as IEN - 12281

INSULATING . . Rubbery mastic for roofs, walls, contains aluminum

Source: ILLINOIS BRONZE POWDER CO.
2021-25 S. Clark St., Chicago 14, Ill.

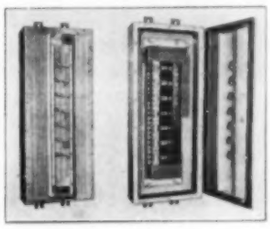
Reflective surface

Ruf-Top is a new thick rubbery mastic, containing aluminum, for brush application on roofs and walls to stop leaks, repel moisture, prevent dripping and to reflect heat and light. The film dries but remains pliable. It will not crack or peel.

If you write maker identify as IEN - 12282

CIRCUIT BREAKER . . Panel assembly eight 3-pole, 100-amp., 600-volt units

Source: CROUSE-HINDS CO.
7th North & Wolf Sts., Syracuse 1, N. Y.



Ample gutter space

Previous rating, maximum at 50 amp. on 250 volts, has been extended to 100 amp. on 600 volts with this new circuit breaker panel assembly. It consists of a cast aluminum enclosure with a gasketed cover to meet requirements for Class-II dusty locations. The external operating handles are designed to engage the breaker handles on the interior after the cover is installed.

The breakers are factory wired to the main busses. There is sufficient metal in the walls to be drilled and tapped.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12283

- TOUGH
- STRONG
- LIGHT
- NON-CORROSIVE

Complete range of sizes to hold cables ⅛" to 1¼" in diam.

For samples and details, write direct to mfr.:

WECKESSER CO. 3261 N. Avondale Ave., Chicago 30, Ill., Dept. L

If you write maker identify as IEN - 12284

KOHLER ENGINES

4-Cycle Air-Cooled

Kohler Engines provide reliable power for a wide range of uses. Compact, quick-starting. Engineered and built to the high standards that have won world-wide acceptance for Kohler Electric Plants in construction and other industries. The Kohler mark has been identified with quality products for over three-quarters of a century. Write for information on distributor's sales franchise.

Kohler Co., Kohler, Wisconsin Established 1873

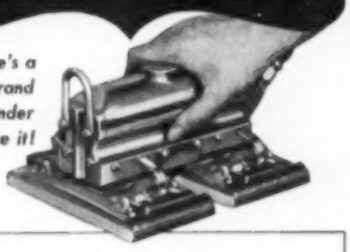
KOHLER OF KOHLER

PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS
AIR CONDITIONERS • PRESSURE CONTROLS

If you write maker identify as IEN - 12285

Whatever your sanding problem...in wood, metal, plastic

...there's a Sundstrand Air Sander to solve it!



SUNDSTRAND SANDERS WITH STRAIGHT-LINE ACTION ARE WIDELY USED FOR:

- Wood finishing . . . building materials, furniture, cabinets, wood parts, etc.
- Plant production and maintenance work.
- Finishing metal parts.
- Plastic and glass finishing.
- Truck, car and machinery refinishing.
- Cleaning purposes . . . vats, bins, and other containers.

SUNDSTRAND

SUNDSTRAND AIR SANDERS

SUNDSTRAND MACHINE TOOL CO.
PNEUMATIC DIVISION, ROCKFORD, ILLINOIS

If you write maker identify as IEN - 12286

solve them once and for all!

SEND TODAY FOR YOUR FREE COPY

INSTRUCTIONS *for laying* KLEMP HEXTEEL and FLOORSTEEL

the miracle floor base that adds years of life!

When mastic or concrete is poured into the mesh of either of these rugged floor armors, industries are constantly writing "period" to previous flooring problems. Truck wheel pounding doesn't break up a Klemp armored floor!

HEXTEEL®

The Klemp instruction booklet is written to help you make a thorough analysis of your own particular flooring problems. Before making further arrangements, take advantage of Klemp's free engineering services. Many nationally known companies have followed this practice, and, as a result, floors reinforced with HEXTEEL or FLOORSTEEL are still in perfect condition after 25 years.

FLOORSTEEL®

KLEMP

KLEMP METAL GRATING CORP.
Executive Offices: 1375 North Branch Street, Chicago 22, Illinois

If you write maker identify as IEN - 12287

how badly they needed a Fairbanks-Morse Generating Set!

Why gamble with power failure? Install a Fairbanks-Morse Generating Set. It provides peace of mind, and protects the lives and welfare of persons on your premises. Fairbanks-Morse offers generating sets to meet every requirement. See your local Fairbanks-Morse dealer today or write Fairbanks, Morse & Co., Chicago 5, Ill.

FAIRBANKS-MORSE,
a name worth remembering

If you write maker identify as IEN - 12288

ROTARY FEEDERS

ROTARY GATE VALVES

THIS NEW BULLETIN F-4, JUST OFF THE PRESS, IS YOURS FOR THE ASKING . . . SEND FOR A COPY NOW!

Fuller Feeders have been in use for many years in the chemical-process industries, handling dry, pulverized, crushed, and granular materials. They are built for various capacities, with circular or rectangular openings, for extreme volumetric accuracy, or where close accuracy is not required. Can be used as air-locks for pressures to 7½ lb. (15" of vacuum) without appreciable losses.

Rotary Gate Valves are used under silo deck slabs and bins. Unrestricted opening permits free flow of material. Free movement of rotor to either open or closed positions. No leakage in closed position. Built for manual or motor operation.

Fuller
FULLER COMPANY, Catasauqua, Pa.
120 S. LaSalle St., Chicago 3
670 Chanonry Bldg., San Francisco 4 F-14

If you write maker identify as IEN - 12289

Now IMMEDIATE DELIVERY

FIXTURE CLAMPS AND COMPONENTS

- SAVE TOOL and DESIGN COSTS.
- LARGEST ASSORTMENT IN THE INDUSTRY.
- ASSURED QUALITY and SERVICE

ECONOMIZE . . USE THEM AS STANDARDS. All precision made of heat treated selected steel, cadmium plated and corrosion-resistant MID-NITE BLACK FINISH (A special MORTON process). Individual parts or complete assemblies. Any MORTON product can be adapted to whatever changes you might specify.

For our 72 page illustrated catalog. Contains full size tracing templates of each product, bound in loose leaf form for easy removal. SAVE TOOL AND DESIGN COSTS.

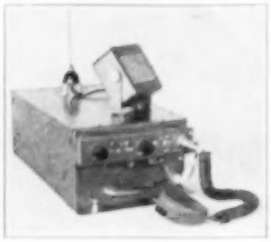
Morton 4

MORTON MACHINE WORKS
2421 Wolcott St., Detroit 20, Mich.

If you write maker identify as IEN - 12290

COMMUNICATING . . Mobile radio for two-way talk in a plant area

Source: GENERAL ELECTRIC CO.
1949 Electronics Park, Syracuse 1, N. Y.



Assists in routing

The company announces development of a new mobile radio telephone for use on industrial plant trucks. The truck operators can answer calls from various parts of a plant and their operations can be directed from a central location. The equipment is available in 1.5 and 10-watt ratings. The loudspeaker is separate so it can be positioned to best advantage. The antenna is mounted on top of the radio cabinet.

If you write maker identify as IEN - 12291

STRAPPING . . Specified metal, size and length in small coils

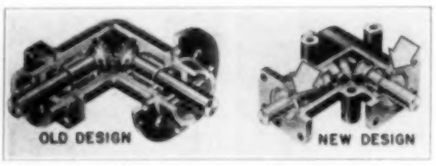
Source: A. J. GERRARD & CO.
1948-52 N. Hawthorne Ave., Melrose Park, Ill.

For specified use

Strapping made of stainless steel, Monel Metal and other specified metal is now available in cut lengths to 36 ft. in any of the company's standard widths and thicknesses. Intended applications are those in which one length will be completely used so no measuring or coil cutting is required. Of the units shown in the illustration, the largest, 4 in., contains 30 ft. of ¾ by .0021-in. strap. The smallest measures 1½ in. in diameter and is 2 ft. in strap length.

If you write maker identify as IEN - 12292

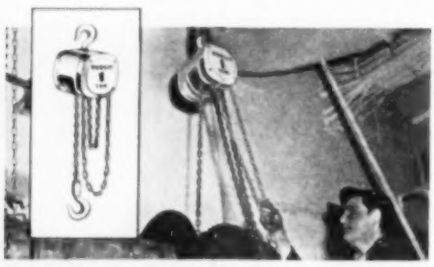
Waldes Kohinoor, in Long Island City, tells us about a redesign of an angle gear assembly in which three Truarc re-



taining rings replace eight screws and washers and eliminate a sleeve spacer. In the new design the retaining rings lock the bearings in place, position the bearing and shaft assemblies. They take the thrust load also.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12293



DOES MORE SPOT LIFTING . . . EASIER

Work pops up all over for a hand hoist that's easy for one man to lift, carry, hang up by himself, and use. No wonder the 'Budgit' Aluminum Chain Block is such a favorite. The ¼-ton size weighs only 29 lbs. and lifts capacity load with a chain pull of 25 lbs. All sizes — ½, 1 and 2 tons — are one man hoists.

Handle all spot-lifting jobs easier, faster by using a tough, economical 'Budgit' Chain Block. Spur gears assure top efficiency. Automatic load brake; spline fastenings, and overcapacity load chain and hooks safeguard man, load, and hoist. Bulletin No. 398 gives complete facts. Write for a copy.

'Budgit'® CHAIN BLOCKS

MANNING, MAXWELL & MOORE, INC.
MUSKEGON, MICHIGAN
Builders of "Shaw-Box" Cranes, 'Budgit' and Load Lifter Hoists and other lifting specialties. Makers of Ashcroft Gauges, Hancock Valves, Consolidated Safety and Relief Valves, and "American" Industrial Instruments.

If you write maker identify as IEN - 12294

CHECK VOLTS and AMPS WITH THE COLUMBIA New A.C. CLAMP TYPE VOLT-AMMETER

• Quickly • Accurately • Safely

Columbia Type AC-1 provides ampere readings with a snap by merely clamping jaws around the electrical conductor, without breaking circuit or insulation. Voltage readings are taken quickly and easily with safety plug-in leads. This instrument is the latest addition to the Columbia line of clamp type instruments of the highest quality and dependability.

TYPE AC-1 FEATURES

- Measures Up to 600 Amperes and 600 Volts.
- Amperes: 0/12/60/120/600 A.C.
- Volts: 0/150/600 A.C.
- Convenient Range Switch.
- Insulated Jaws Will Accommodate Conductors up to 1-1/2" diameter, Bus Bars up to 2" x 1/2".
- Accuracy: 3% full scale.
- Light Weight — Fits Easily Into Pocket.
- High Quality At Low Cost.

PRICE $75.00 COMPLETE WITH VOLTAGE LEADS AND CARRYING CASE

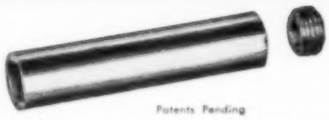
Inquiries Invited From Distributors

Write for descriptive Bulletin AC-19

COLUMBIA ELECTRIC MFG. CO. 4519 Hamilton Ave. Cleveland 14, Ohio

If you write maker identify as IEN - 12295

How SQUARE HOLED SLEEVES SPEED UP TOOL-MAKING!



Patents Pending

One of the most difficult problems in tool making can be solved easily and quickly with Sturdy Square Holed Sleeves. The perfection of broached square holes can be had in boring bars, milling cutters and many other applications at a small fraction of the cost of imperfect hand-made square holes. The sturdy Square Holed Sleeve consists of a round sleeve with a perfectly square hole broached through the center. This hole is tapped at one end to receive a back-up screw which is furnished with the sleeve. The sleeve can be sweated or pressed into a drilled and reamed hole to make a perfectly square accurate hole in a very few minutes.

The Sturdy Square Holed Sleeve will save you many hours and many dollars in the making of boring bars, tool holders and other tools requiring square holes.

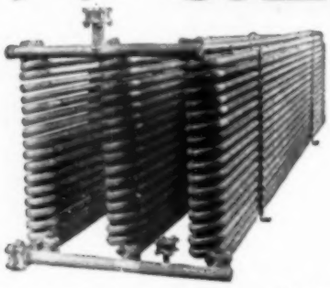
BUSHINGS MADE IN FOLLOWING SIZES:
3/16, 1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4, 1"

Write for Literature

STURDY BROACHING SERVICE
23516 TELEGRAPH ROAD, DETROIT 19, MICH.

If you write maker identify as IEN - 12296

PITTSBURGH COILS
a air pressure tested



Pipe Coils — Bends — Boiler Tubes — Skid Pipes

Electrically welded, continuous; Air-Pressure-Tested while submerged in water. Built to your specifications.

— Send for Coil Data Book, and let us quote —

Welded Headers • Welded Ammonia Receivers • Accumulators

Pittsburgh Pipe Coil & Bending Company
Division of Pittsburgh Seamless Tubes Inc.
20 BRIDGE STREET ETNA (PITTSBURGH 2), PA.

If you write maker identify as IEN - 12297

Ledeen PNEUMATIC & HYDRAULIC Equipment

CYLINDERS

For air, oil, water, gas or steam operation—in standard and special diameters and stroke lengths.

Write for Bulletin 500

VALVES

For operating air and hydraulic cylinders and motors, single and double acting. Hand, foot, power and solenoid operated.

Write for Bulletin 1000

VALVE ACTUATORS

For power operation and remote control of line valves. Adaptable to most any make, size and type of valve, to operate against any line pressure, for any fluid medium, with any pressure.

Write for Bulletin 512

AIR-HYDRAULIC PUMPS

High pressure oil from low pressure air. For clamping, drawing, forming, testing and other operations requiring long high pressure cycles without vibration or overheating. Ready for connection to plant air and hydraulic lines.

Write for Bulletin 4000

Ledeen Mfg. Co.
1602 San Pedro
Los Angeles 15, Calif.

VALVES • CYLINDERS
AIR-HYDRAULIC
PUMPS & BOOSTERS
VALVE ACTUATORS
AIR HOISTS

If you write maker identify as IEN - 12298

an ACCO product

SOLID . . . as a rod
FLEXIBLE . . . as a wire rope

TRU-LAY Push-Pulls snake around obstructions. Provide positive remote action for operating clutches, gates, slides, etc. Operate while flexing. Weatherproof, dustproof types. Capacities up to 1000 pounds input.

Write our Detroit office today for DH-287

TRU-LAY PUSH-PULL CONTROLS

ACCO

AUTOMOTIVE AND AIRCRAFT DIVISION
AMERICAN CHAIN & CABLE

601 Stephenson Bldg., Detroit 2
2475 Porter St., Los Angeles 21 • Bridgeport, Conn.

If you write maker identify as IEN - 12300

DRYING . . Cycling dehumidifier, 1,500 cfm. of dry air at 1 in. of water

Source: DALY, MERRITT & SULLIVAN INC.
1107-11 W. Broad St., Falls Church, Va.

About $5,000

Duplicate housings, containing beds of desiccant with electric heating elements and controls, are assembled on the two sides of circulating and reactivating blowers for automatic cycling operation in this new Model DOH-800 Desomatic equipment. Dry air volume is 1,500 cfm. Water removal capacity is 500 lb. in 24 hr. at 70 deg. F. dry bulb and 35 per cent relative humidity.

Automatic control turns the heating elements on and off and switches between drying and reactivating at pre-determined intervals without need for operator attention. Cycle length can be adjusted for both adsorption and reactivation by means of timers with variable settings. A switch is included in the controls so the equipment can be set to operate continually, or connections can be made through one or more humidistats in parallel.

A building such as a warehouse can be held at constant relative humidity of 35 per cent with building content to 250,000 cu. ft. when the construction includes suitable vapor barriers to minimize moisture infiltration from the outside. Overall dimensions are about 9 by 4½ by 8¼ feet.

If you write maker identify as IEN - 12301

WELDING . . DC arc machine, engine drive, also for 110 volt ac.

Source: WESTINGHOUSE ELECTRIC CORP.
511 Wood St., Dept. IEN, Rm. 1110, Pittsburgh 30, Pa.

No power line needed

The generator in this new Type EW-20 engine driven welder is a self-exciting compound wound unit serving both as a dc generator for the welding operation and as a single-phase alternator to supply auxiliary power to lights and power tools. The engine is a Ford No. 120 water cooled industrial unit. It is direct connected to the generator.

Welding current is controlled in four ranges by a tap switch and shunt field rheostat for normal welding rating of 200 amp. at 40 volts on 60 per cent duty cycle. Current ranges from 40 to 250 amp. in accordance with NEMA standards. Auxiliary power, to 3 kw., is available during "off" periods at 100 per cent power factor or to 2 kva. at 80 per cent power factor. When the welder is in operation, about 300 watts of auxiliary power are available for lighting purposes. The ac. circuit includes conventional outlets, a voltmeter and a circuit breaker with overload protection. A two-wheel running gear is available to move the unit from one location to another.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12302

PRECISION IN ALLOY STEEL TUBE SAVES MATERIAL, TIME-LOSS

CLOSE TOLERANCE . . . Tubing having O.D., I.D. dimension spread of .002" and concentricity within 10% of the wall thickness was needed by a Superior customer to save extensive machining operations with consequent time and material losses. Manufacturer of precision ball bearings, this customer forms both inner and outer races of E-52100 tubing where bar stock was formerly used . . . the savings are well worth having—the bearings perform even better than before.

YOU, TOO may have a need for fine small tubing that can help solve a fabrication or performance problem. Superior can probably help. Check your needs against our production of tubing in all analyses from .010" to ⅝" O.D. and in certain analyses (.035" max. wall) up to 1⅜" O.D. Write for information and free literature today.

SUPERIOR TUBE COMPANY
2016 Germantown Avenue
Norristown, Pennsylvania

If you write maker identify as IEN - 12303

FOR YOUR TOUGHEST JOBS NEW OTC

30 TON POWER-TWIN Hydraulic Puller
BIG BROTHER TO THE FAMOUS 17½ TON POWER-TWIN

FAMOUS CENTER HOLE
Lets Power-Twins do jobs thought impossible . . . unlimited adjustment . . . eliminates torque, friction . . . versatile interchange of parts.

Dynamite . . . the tough 30 ton OTC Power-Twin Hydraulic Puller . . . saves hours and dollars on every overhaul job. Light . . . compact . . . safe remote control. Gives 30 tons of power with only 100 pounds of pump pressure. Complete Hydraulic Puller sets for both 30 ton and 17½ ton Power-Twin.

WORKS WONDERS

Power-Twin pulls or installs bearings, gears, pinions, shafts, studs, wheels, pulleys . . . also performs as a heavy jack, straightener or compressor.

See your jobber for complete information or write us.

OWATONNA TOOL COMPANY
371 CEDAR STREET • OWATONNA, MINNESOTA

If you write maker identify as IEN - 12304

CLEAN COOLANT CUTS REJECTS to ½%

. . . . production up 15 to 20%

Rejects—averaging 25% with unfiltered coolant—were reduced to less than ½% when Bowser filtered. Our nearest sales engineer will welcome an opportunity to discuss your coolant filtration problems. May we have him call?

There's a Bowser cutting oil or coolant filter for any metalworking requirement.

BOWSER, INC.
BOWSER 1338 Creighton Ave., Fort Wayne 2, Ind.

Liquid Handling Specialists Since 1885

If you write maker identify as IEN - 12305

50 TONS OF POWER ...POSITIONED IN SECONDS!

It's a cinch with the new HEIN-WERNER model 50.12AA Hydraulic Jack

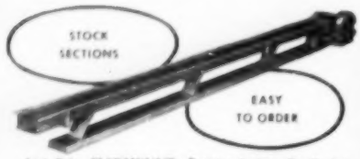
No "spotting" drudgery here! Sturdy positioning handles afford firm, secure grip . . . permit easy maneuverability. Handles fall flush against jack housing when not in use. This 50-ton HEIN-WERNER model is ideal for moving heavy machinery, bending pipe, pulling gears and pinions, and similar heavy duty jobs. It is powerful . . . safe . . . easy to use. Tandem pump speeds jacking . . . saves effort. See your industrial supply distributor or write us.

Hein-Werner HYDRAULIC JACKS

HEIN-WERNER CORPORATION • WAUKESHA • WISCONSIN

If you write maker identify as IEN - 12306

NOW! FLEXMOUNT Oscillating Conveyors available from stock!



Link-Belt FLEXMOUNT Positive-Action Oscillating Conveyors offer unique advantages on a wide range of hard-to-handle materials: fine, lumpy, stringy ... materials in food and chemical process industries ... sharp, oily chips and turnings ... hot sintered materials, etc. Uniform, gentle flow is achieved with Positive-Action. Leak-proof, all-metal trough can be made dust-tight. Extremely compact, low in operating costs.

WRITE FOR BOOK 2478

LINK-BELT

LINK-BELT COMPANY Plants: Chicago, Indianapolis, Philadelphia, Atlanta, Houston, Minneapolis, San Francisco, Los Angeles, Seattle, Toronto, Springs (South Africa), Sydney (Australia). Sales Offices, Factory Branch Stores and Distributors in Principal Cities.

If you write maker identify as IEN - 12307

HOW ABOUT IT?

is YOUR plant clean enough for precision defense production?

Model 748

Don't sabotage your plant facilities with dirt and debris. Clean plants measure up to defense production standards.

Send for important Doyle Vac-It information today. There's no obligation.

Doyle VACUUM CLEANER CO.

2335 Stevens St., S. W. Grand Rapids 7, Michigan

If you write maker identify as IEN - 12308

BE CERTAIN

GET BRONCO 60 Certified

the portable cords and cables with 60% by weight Neoprene jackets.

BRANDED!

BRANDED JACKETS! No mistake... You know you are getting Certified. You read at a glance cable type, size, voltage, "P116BM", which indicates approval by the Pennsylvania Bureau of Mines, and acceptance for listing by the U. S. Bureau of Mines. Easy to measure ... "Bronco" is repeated every 2 feet.

With Bronco 60 Certified you know you are getting a full 60% by weight of Neoprene in your cable's protecting jacket because its contents are certified.

More Neoprene makes long-lasting Bronco 60 Certified more resistant to oil, acids, alkalis, ozone, gasoline, salt water.

In addition, with Bronco 60 Certified you get: 1. Cold Rubber Insulation. 2. Branded Jackets. 3. Superior Flexibility.

So, BE CERTAIN, GET CERTIFIED — the greatest cord value on the market!

SOLD NATIONALLY BY ELECTRICAL WHOLESALE DISTRIBUTORS

WESTERN INSULATED WIRE CO.
Los Angeles 58, California

If you write maker identify as IEN - 12309

TRUCK . . Platform trailer rates 10 ton, 7 by 14 ft. deck

Source: MERCURY MFG. CO.
4132 S. Halsted St., Chicago 9, Ill.

Designed for these big loads

Model A-614-10B is a new trailer standing 22½ in. above the ground and capable of carrying a 10-ton load. The non-skid steel plate deck is assembled in a frame that is mounted on 2⅝-in. axles that ride in 15-in. rubber tired wheels on Timken bearings. The front axle is mounted on a fifth wheel turn table assembly and is equipped with a steering tongue. At the rear is a C-type coupler. Four stake pockets are located on each side with two at each end. A flush type steel deck, smooth or non-skid, or a hardwood deck can be specified.

If you write maker identify as IEN - 12310

COUNTERSINKING . . Adjustable cutter positions endwise in outer housing

Source: SEVERANCE TOOL INDUSTRIES INC.
740 Iowa St., Saginaw, Mich.

Depth in thousandths

Knurled sleeve on the housing of this new Stop-Countersink is moved toward the cutter end to disengage teeth on its base and then is turned to right or left to adjust the depth, in thousandths, to which the cutter will penetrate a work surface. The complete assembly threads in place on the user's portable tool as shown in the illustration. Only the cutter rotates with the tool spindle.

Two cutter diameters are $\frac{5}{16}$ and ¾ in. with angles ranging from 30 to 55 deg. and with pilot diameters from $\frac{3}{16}$ to ⅝ inch. The cutters are made of high speed steel or can be specified in carbide. The four cutting teeth are arranged for free chip flow and chatter free action.

Identify as IEN - 12311

School days for management are in full swing again at the American Management Association. The school house is on the Hotel Astor Roof in New York City. The students are seasoned executives from everywhere. The faculty is top industrial management and AMA personnel. The course consists of four units each taking a week of five days. New classes start each week through next June. To date more than a thousand registrations have been received. The association has published a booklet describing the course and telling about enrollment.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12312

"M-B" Model S-VT 18,000 RPM "SPEE-DEE" Pneumatic POLISHER

A development filling a distinct need. Produces remarkable results on real product on work when abrasive rolls and pencils, also bands, etc., are used. Flexible air-control lever for starting and stopping. Husky, light weight, 14 oz. Power to spare. Special grease-sealed bearings. Will handle many applications, also with "High-Speed" Rotary Files.

ALSO "M-B" PNEUMATIC GRINDERS — AUTOMATIC AIR LINE FILTERS, REGULATORS AND LUBRICATORS

"Remember, Built-In Quality Remains Long After First-Cost Disappears"

Write for Literature

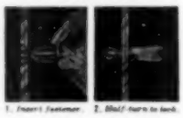
M-B PRODUCTS
46 Victor Avenue
DETROIT 3, MICHIGAN

If you write maker identify as IEN - 12313

This fastener works through thick and thin!

Spring-Lock works whether panel thicknesses run over or under specifications! Spring wire deflects automatically to handle greater or lesser thicknesses. Spring-Lock's design flexibility makes it more than a fastener: it can be adapted as a shelf support, door strike, knob or any similar panel-mounted device. Many standard shapes and sizes of Simmons Spring-Locks are available from stock.

HERE'S HOW SPRING-LOCK WORKS



1. Insert fastener. 2. Half-turn to lock.

- Installation is BLIND
- Installation is EASY: no special tools are needed
- Installation is QUICK: a half-turn locks it in place
- Installation is SECURE: the *spring* steel *locks* the fastener, resists vibration

Send for details and samples, or write us about your fastening problem.

SIMMONS FASTENER CORPORATION
1758 North Broadway, Albany 1, N. Y.

Spring-Lock • Quick-Lock • Roto-Lock

If you write maker identify as IEN - 12314

power for big cuts

accuracy for second operation work

THE NEW GLOBE HAND-SCREW MACHINE
10" Swing Over Bed

Here's the hand-screw machine that combines the features of a production and a precision lathe!

EXTRA WEIGHT in bed, headstock and accessories insure close tolerance work; rigidity for heavy loads and chatter-free operation.

BIG 1-7/16" SPINDLE HOLE takes oversize work diameters. Chucks 1" bar stock in draw collets or 1⅜" work in nose collets!

HIGH SPEED BEARINGS: Tapered rollers insure spindle rigidity, high speeds, easy take-up.

INSTANT SPEED CHANGES with gear selector.

16 SPINDLE SPEEDS—from 184 to 3796 rpm.

POWER—1 full horsepower, 2 speed motor, twin Vee belts to spindle.

LOW COST—priced in the economy range.

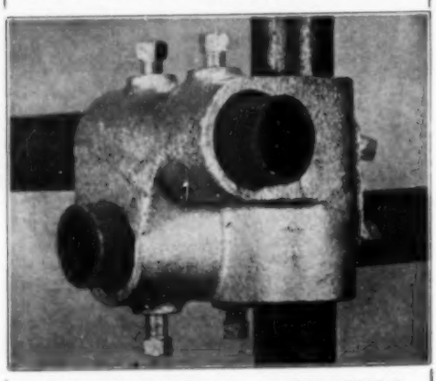
ASK FOR DETAILS!

GLOBE HEAT-SEAL, INC.
MACHINE TOOL DIVISION

3376 S. Robertson Blvd.,
Los Angeles 34, Calif.

If you write maker identify as IEN - 12315

MAKE YOUR OWN SCAFFOLDS WITH PIPE



MAINTENANCE AND CONSTRUCTION MEN ARE BUILDING

Safe, durable, adjustable, frame and rolling scaffolds to suit their desire and needs for all of their easy and difficult jobs with:

AMIDON FITTINGS
and standard pipe-pictures available

AMIDON ENGINEERING CO., ELYRIA 14, O.

If you write maker identify as IEN - 12316

SEND for this booklet on Vibration Control by Vibra-Mounts. It describes the new, simple, economical way to obtain up to 85% reduction in transmitted vibration, increasing plant efficiency, protecting machines, instruments, buildings and personnel. Vibra-Mounts can be installed quickly by superintendents and maintenance men.

Booklet sent FREE on request.

American Felt Company
TRADE MARK

GENERAL OFFICES: 18 GLENVILLE ROAD, GLENVILLE, CONN.
SALES OFFICES: New York, Boston, Chicago, Detroit, Cleveland, Rochester, Philadelphia, St. Louis, Atlanta, Dallas, San Francisco, Los Angeles, Portland, Seattle, San Diego, Montreal — PLANTS: Glenville, Conn.; Franklin, Mass.; Newburgh, N. Y.; Detroit, Mich.; Westerly, R. I. — ENGINEERING AND RESEARCH LABORATORIES: Glenville, Conn.

If you write maker identify as IEN - 12317

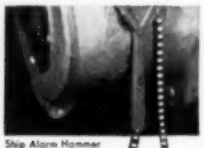
Secure LOOSE PARTS with Bead Chain

A MUST for Military Products

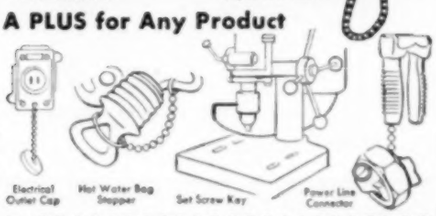
Canteen Cap — Courtesy Wyandotte Chem. Co.

Sterilizer Lamp Cap

Aircraft Access Plate


Ship Alarm Hammer

A PLUS for Any Product



When a householder or industrial worker mislays an essential part of your product, he may suffer inconvenience or minor hardship. But, loss of some important small part of military equipment may mean that men are lost, too.

As a positive leash for straying parts, nothing can equal Bead Chain! Non-kinking, free-swiveling action assures full freedom in using the part or tool secured. It is small, light, attractive . . . yet strong enough to hold under abusive strains.

Check your product now! Leash any part that may stray. It costs only a penny or two, as a rule, to add a Bead Chain retainer that's worth dollars as a trouble-saver for your customers.

Kinkless Chain of a Thousand Uses

Design ingenuity can employ Bead Chain in many unique ways to gain new product appeals, please buyers, cut costs. For example: A low-cost non-slip chain drive for business machines, TV tuners, venetian blinds etc. Pulls for electric lights, fans, registers, zippers. Trimming for leather goods, wearing apparel, etc. Suspensions for light bowls and signs . . . and in countless other ways.

Get "Bead Chain" . . . Get 4 Plus Values

As the world's largest producer of Bead Chain, the Bead Chain Company offers you: (1) Dependable quality and delivery. (2) Unmatched application help based on experience with thousands of users. (3) Widest selection of chain sizes, styles, metals, finishes—and attachments to fit every need. (4) Money-saving assembly service which provides made-to-your-order assemblies.

NEW! Bead Chain Catalog-Data Folder. Write today!

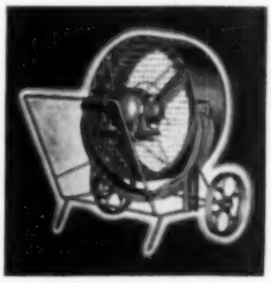
BEAD CHAIN®

The Bead Chain Mfg. Co., 59 Mt. Grove St., Bridgeport, Conn.

If you write maker identify as IEN - 12319

VENTILATING . . Portable fan for utility use, 24, 32, 36 inches

Source: HARTZELL PROPELLER FAN CO.
1023-27 Roosevelt Rd., Piqua, Ohio


Sits solidly, moves quickly

Welded frame equipped with 15-in. metal wheels provides support for the cylindrical housing that encloses this new motor driven utility fan. Screen guards enclose the rotating parts to protect nearby workers. The fan can be turned in its trunnion mounting to direct its air stream as required. The propeller type fan blades are mounted directly on the motor shaft. The motor is available for standard electrical circuits.

If you write maker identify as IEN - 12320

INSULATING . . Liquid asphalt to weather proof and deaden sound

Source: MINNESOTA MINING & MFG. CO.
409-13 Piquette Ave., Detroit 2, Mich.

$4 per pail
$30 per drum

Sprayable black asphalt, Type EC-1189, is a new liquid material that forms a tough pliable non-hardening film on metal and non-metallic surfaces. It is suitable for use as an undercoating for transportation equipment, as a protecting film for the exterior of storage tanks, tank trucks, railroad cars, as weathering protection on plant roofs and walls. In addition to protecting against corrosion and weathering the material is an excellent sound deadener. It dries in about 48 hours when sprayed or brushed to a ⅛-in. thickness. Material is packaged in 5-gal. pails and 55-gal. drums.

If you write maker identify as IEN - 12321

FURNITURE . . Steel cabinet for utility application in a plant

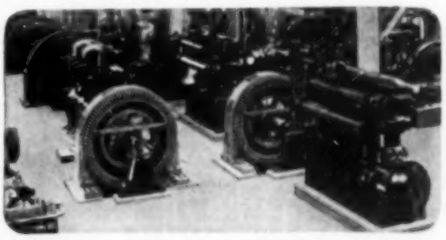
Source: KALASTEEL PRODUCTS CO.
340 Parsons St., Kalamazoo, Mich.

List is $44.50

The steel top of this new No. 300 cabinet measures 36 by 24 inches. It stands 34 in. above the floor and is equipped with a 3-in. back and tapered side shoulders. The space beneath the top is enclosed by a pair of hinged doors equipped with a chromium plated locking handle. A center shelf can be raised or lowered through 6 in. in the interior. The finish is green or gray baked enamel. Weight is about 128 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12322



Celanese Corp. Uses 6420 Horsepower of Frick Refrigeration

Fourteen Frick refrigerating machines are in operation at the Amcelle plant of Celanese Corporation of America, near Cumberland, Md., makers of chemical yarns. Most of these ammonia compressors have been in use since 1929. The motors driving the new vertical machines, shown in the foreground, are each of 1250 hp.

This is a large-scale example of the dependability and economy of Frick ammonia refrigeration. Power requirements, when operating in summer weather on air conditioning loads, are only 0.70 hp. per ton of refrigeration.

FRICK & CO.
DEPENDABLE REFRIGERATION SINCE 1882
WAYNESBORO, PENNA. U.S.A.

Also Builders of Power Farming and Sawmill Machinery

If you write maker identify as IEN - 12323

Welding Machine Manufacturer Specifies CASH-ACME

Where two or three stage high pressure reduction is required, a combination of CASH-ACME Automatic Pressure Reducing and Regulating Valves can be depended upon to do the job. Consistent, unfailing operation due to precision construction of the finest quality materials is the reason CASH-ACME Valves are being specified by more and more industries. Write for literature describing CASH-ACME Automatic Valves and the pressure control job they can do on your products.

CASH ACME SILENT SENTINEL Automatic Valves

A. W. CASH VALVE MANUFACTURING CORP.
6612 E. Wabash Avenue
Decatur, Illinois

If you write maker identify as IEN - 12324

Precision 16" Drilling Machine

saves valuable time in tool-room and model shop by reducing set-up time and supplying correct speeds.

WIDE RANGE INSTANT SPEED SELECTION OF 150 TO 4000 R. P. M.

for drilling, reaming, spot-facing, counter-boring and tapping. Variable speed spindle with built-in back gears, driven by ½ HP single or three phase built-in motor. Completely enclosed drill head design; *no belt changing required.*

FEATURES . . . Convenient direct reading infinitely variable spindle speed control dial, together with a drill size, speed and material chart. Quick-set vernier depth control. Sealed-for-life ball bearings throughout. Heavy construction plus precision machining for accurate and dependable performance. Counter-balanced head on bench model. Tilting table and ground base on floor model.

Bench Model 601 variable speed counter-balanced head. Supplied with No. 2 Morse taper or Jacobs No. 2A taper.

Free Data on this advanced design precision drilling machine is available upon request.

The ELECTRO-MECHANO CO.
269 E. ERIE STREET MILWAUKEE 2, WISCONSIN

If you write maker identify as IEN - 12325

STRIPS WIRE CLEAN IN 2 SECONDS!

IDEAL Stripmaster (Patent Pending)

6 MODELS —for all wire gauges 8 to 22—Also POS/FM and TV down lead wires.

Easier, Faster—No Cut Fingers! . . . One Light Squeeze Strips Clean . . . Can't Crush Wire. Unique in design—unique in performance! One easy squeeze strips up to 7/8 in. Exclusive "automatic" feature holds jaws open while wire is removed — positively prevents crushing. Just insert wire, squeeze and release! Weighs only 10 oz. — fits in pocket. Blade can be changed in a jiffy! See the Stripmaster at your IDEAL Distributor's or mail coupon below.

SOLD THROUGH AMERICA'S LEADING DISTRIBUTORS

OTHER WIRING TOOLS
- ☐ Voltage Testers
- ☐ Fish tape, reels and pullers
- ☐ Joist borers
- ☐ B-X cutters
- ☐ Fuse clip clamps
- ☐ Fuse pullers
- ☐ Test lines

IDEAL INDUSTRIES, Inc.
1108 Park Avenue, Sycamore, Illinois
Please send free catalog information on Stripmaster and other wiring tools as checked.

Name_____
Company_____
Address_____
City_____ Zone____ State____

If you write maker identify as IEN - 12326

PROTECT good design with Quadriga SPECIAL STAMPINGS and WASHERS

QUADRIGA stampings and washers are custom fabricated to your specialized requirements.

Carefully controlled for quality, precision, and consistent uniformity, they reduce noise and vibration to a bare minimum—afford structural stability and increased service life. Protect the design, workmanship, and performance standards built into your product. Use QUADRIGA stampings and washers.

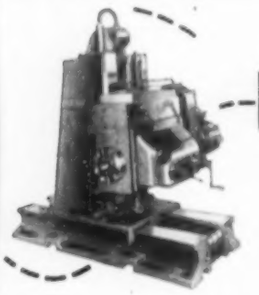
Stampings of all types. Tension, spring, formed, drawn, cupped or finishing washers. Furnished in all types of materials. Also wire terminal washers. Press capacity to 150 tons—depth of draw to 4 in. We build dies.

Send B. P. sample or data for estimate and ask for new illustrated catalog.

THE QUADRIGA MANUFACTURING CO.
215 A WEST GRAND AVENUE • CHICAGO 10, ILLINOIS

If you write maker identify as IEN - 12327

FORNEY
BORING and FACING MACHINE



★ Boring
★ Facing
★ Milling
★ Tapping
★ Drilling

WRITE FOR NEW BULLETIN

Designed to eliminate conventional overhang for necessary bar travel providing greater resistance to bending stresses when boring — greater rigidity when milling — increased capacity when facing. Numerous applications can be made in boring, facing, drilling, tapping and milling. Duplicator attachments available. Standard model weighs 10,000 pounds.

FORNEY'S INCORPORATED
Manufacturers of Special Machinery Since 1916
ELM ST. NEW CASTLE, PENNSYLVANIA

If you write maker identify as IEN - 12328

INCREASES TAP LIFE by Guided Accuracy

Quickly pays for itself on small-lot tapping operations. Insures accurately tapped holes, increases work output—practically eliminates tap breakage and removal. Has slotted base for fixtures. Special steel machined parts. Long spindle bearing provides accurate alignment and long life. Four hardened collets, furnished, handles standard tap shank sizes from No. 0 through ¼. Either right or left hand taps may be used. Finished in machine tool gray. Write for circular.

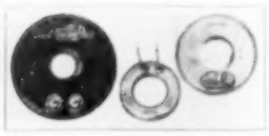
$20.50 POSTPAID

H. D. HERDER TOOL SPECIALTIES
2724 E. MICHIGAN AVE.
KALAMAZOO, MICH.

If you write maker identify as IEN - 12329

HEATING . . Electric element, ring design, 75 to 1,000 watt ratings

Source: VULCAN ELECTRIC CO.
86-90 Holten St., Danvers, Mass.



For equipment use

Six sizes range from 2 to 6 in. in diameter in this new line of ring type electric heating elements. Thickness is ¼ to ⅜ inch. Two types are assembled in rust resisting steel or in stainless steel. Rating is 75 to 800 watts with temperature to 750 deg. F. in the first case. It is 100 to 1,000 watts and to 1,200 deg. F. in the second. Standard construction includes threaded stud terminals. Operation is on 110 or 220 volts as specified. Flexible leads can be supplied in place of the terminals. Special voltages can be named also.

If you write maker identify as IEN - 12330

LIGHTING . . Portable electric unit clamps on Burgess 4F5H battery

Source: GENERAL SCIENTIFIC EQUIPMENT CO.
2785 W. Huntingdon St., Philadelphia 32, Pa.

$16.65 complete

Model 22 is a new portable electric light with a 6-in. adjustable chromium plated head and reflector and a double filament lamp rating 3 cp. on low beam and 21 cp. on high beam. A sealed beam lamp can be supplied to specification. The head is equipped with a rubber grip handle and clamps in place on a 7½-volt Model 4F5H Burgess battery or its equivalent. List price alone is $12.50. The battery adds $4.15 to the list price of the unit itself.

Identify as IEN - 12331

Dealers for Detroit Diesel Engine Division of General Motors in Detroit are doing a good job of replacing gasoline engines in switching locomotives with smaller diesel engines

equipped with hydraulic torque converters. The change steps up ability of the locomotive to a remarkable extent. It also steps down the fuel cost.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12332

A PAID NEWS ADVERTISEMENT BY REMINGTON RAND INC.

A TOOL CRIB CONTROL SYSTEM THAT PAYS FOR ITSELF

It's actually easier, and takes less work, to maintain *complete* control over tools than to rely on makeshift routines. And the small investment it takes to set up an effective Tool Crib System is quickly amortized (1) through assured availability of tools, accurately scheduled to meet production line demands; (2) through numerous savings, readily demonstrated, on tool purchase, use, repair, and maintenance; (3) through reduced tool crib personnel.

Remington Rand offers a free booklet which shows in detail how many firms get these practical results. Remington Rand Tool Crib Systems keep paperwork at an absolute minimum — simplify the filing and finding of records by tool, and by worker, and give you at all times a *visible* picture of your tool supply status.

For your free copy of Booklet KD 641, write direct to the publisher — Remington Rand, Room 1485, 315 Fourth Avenue, New York 10, N. Y. — or use the Reader Service Form herein.

REMINGTON RAND INC.
Management Controls Library, Room 1485,
315 Fourth Ave., New York 10, N. Y.

If you write maker identify as IEN - 12333

Wherever an ACORN NUT is indicated

—slash your fastening costs with

PALNUT TRADEMARK **ACORN SELF-LOCKING NUTS**

- *Self-locking action holds tight under vibration*
- *Eliminates lockwashers*
- *Priced lower than ordinary acorn nuts*

ON light assemblies now using ordinary cap or acorn nuts, you save money and get a quick, secure fastening by changing to PALNUT Acorn Self-Locking Nuts. They are pleasingly dome shaped and have the famous PALNUT double-locking action that defies vibration. Very low in cost—light in weight—easily, speedily applied—cover rough, unsightly bolt ends, eliminate catching or scratching. Send details of application for free samples and further information.

The Palnut Co., 59 Cordier St., Irvington 11, N. J.
In Canada: P. L. Robertson Mfg. Co., Ltd., Milton, Ontario

PALNUT SELF-LOCKING NUTS AND FASTENERS
for quick, secure fastening at low cost

If you write maker identify as IEN - 12334

Automatically LIDS MIXED SIZE BOXES

fmc RANDOM SIZE BOX LIDDER

up to 600 per hour . . .

One operator can lid up to 600 boxes of mixed sizes per hour on the *fmc* Random Size Box Lidder. As the boxes are conveyed into the machine, it automatically adjusts the nailing chucks to the proper size, drives the required number of nails, and discharges the lidded box on to an outgoing conveyor, taking the place of several nailing machines which would otherwise be required to handle the same volume and variety of production.

SEND FOR ILLUSTRATED BULLETIN

FOOD MACHINERY & CHEMICAL CORPORATION
Packing Equipment Division, Dept. D
Riverside, California
NM-20-C

If you write maker identify as IEN - 12335

No Wonder LESTO IS THE LEADER IN PORTABLE Electric HAND SAWS

Designed, Manufactured and Patented by Scintilla, Ltd., Switzerland, since 1944.

SAWS
- 2" Hard or Soft Wood
- Curves of All Types
- Insertions
- Plastics

Write for Literature
Sold & Serviced in Principal Cities Throughout U.S.A.
VICTOR J. KRIEG, Inc.
Sole U.S. Representative for Scintilla, Ltd., Switzerland
51 West 52nd St., New York 19, N. Y.
ELdorado 5-4030
Some Sales Territories Available

If you write maker identify as IEN - 12336

Every month, more plants adopt AMPLEX INFRA-RED LAMPS

Amplex Infra-Red Lamps in Triangle ceiling oven installation, The Hoover Company, Cambridge, O.

FASTER BAKING TIME and lower cost! That's why The Hoover Company, makers of vacuum cleaners and other electrical appliances, adopted Amplex Industrial Infra-Red Lamps. These lamps have extra-long burning lives . . . come in the most complete line of types and wattages ever marketed. For new efficiency and dollar savings get the whole story. **Write Amplex Corporation, Dept. X-11, 111 Water St., Brooklyn 1, N. Y.**

AMPLEX

Sealed Beam Reflector Lamps, Colorbeam Lamps, Spotlites and Floodlites, Industrial Infra-Red Heat Lamps, Vibration and Rough Service Lamps, Street Lighting Lamps, Traffic Signal Lamps, Incandescent Lamps, Fluorescent Tubes, Display Accessories.

If you write maker identify as IEN - 12337

SAFETY FOR YOUR MEN... VALUE FOR YOU with U. S. NEOPRENE GLOVES

They help prevent costly accidents. • They withstand gasolines, oils, greases, and corrosive chemicals such as sulphuric, chromic, and muriatic acids, caustic and plating solutions. • The rough-surface fingers assure positive easy gripping. • They're comfortable because the curved finger construction conforms to the natural curve of hand, eliminates straining and pulling. Highly flexible, they permit easy, natural working motions. These "U. S." gloves withstand tough service. Full range of sizes, lengths and weights. "U. S." technical men will be glad to analyze your glove needs and recommend the correct glove for *your* job.

U.S. INDUSTRIAL GLOVES

UNITED STATES RUBBER COMPANY

If you write maker identify as IEN - 12339

FASTENING . . Concrete anchor presents a supporting hook or eye

Source: SUPER-GRIP ANCHOR BOLT CO. 3337 No. 22nd St., Philadelphia 40, Pa.

Patented design

Lead sleeve and dished steel washer are assembled back of the tapered head at one end of this new fastener. Insertion as shown in the illustration is into a 12-in. hole in a concrete wall or ceiling. The company supplies a special tool to apply on the washer in order to mushroom the lead and flatten the washer to grip permanently in the hole.

Both assemblies are rust proofed and available in lengths to 6 inches. Application can be made in supporting pipe, conduit, electric wire and cable, guy wires. Pipe capacity is from ½ to 1 inch.

If you write maker identify as IEN - 12340

METAL . . Copper clad steel plate for use in equipment manufacture

Source: LUKENS STEEL CO. 501-S Lukens Bldg., Coatesville, Pa.

Conserves copper

Copper is clad permanently and uniformly on one side of a carbon steel backing plate to provide a new material for construction of electrical apparatus, evaporators, water heaters, heat exchangers, tube sheets, tanks and vessels. Cladding ranges from 10 to 15 or 20 per cent of the total plate thickness with plate sizes to 120 in. in width by 380 in. in length. Thickness ranges from $\frac{3}{8}$ to $1\frac{1}{4}$ inches. Included in the line are flanged or flanged and dished heads.

Two types of cladding include oxygen-free high conductivity copper for special electrical applications and phosphorus-deoxidized copper for good weldability. The backing steel can be plain carbon or low alloy steel, flange or fire box quality, conforming to ASTM or ASME Specifications. The plate can be sheared, formed, rolled.

If you write maker identify as IEN - 12341

GAGE . . Flexible steel rule in plastic case, push pull action

Source: STANLEY TOOLS 478-82 Myrtle St., New Britain, Conn.

Weighs 1½ ounces

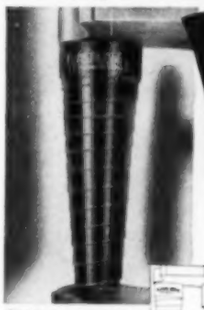
Number 636-W is a new formed flexible steel rule that will hold in a straight line as it is pulled from its two-tone red and black plastic case. The blade measures ⅜ in. in width by 6 ft. in length. It is coated with baked white enamel to form a background for black numbers. Case diameter measures $1\frac{3}{4}$ inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

If you write maker identify as IEN - 12342

IT'S SAFETY FIRST!

For Man, Machine and Production with ELASTICONE GUIDE PIN COVERS



Protect Pins and Bushings from nicks and scratches . . . prevent injuries to Die Setters and Operators with Elasticone Guide Pin Covers.

Elasticones are manufactured in stock sizes. Specify O.D. of bushing and full open height of set when ordering. Write for full information and literature.

Just Snap Into Place

No Tools Required

No Installation Costs

CENTRAL

2200 EAST HUNTINGDON ST. PHILA. 25, PA.

CENTRAL SAFETY EQUIPMENT COMPANY

If you write maker identify as IEN - 12343

You can CUT THIN WALL SECTIONS BETTER with Kalamazoo METAL CUTTING BAND SAWS

Why? Because Kalamazoo's hydraulic frame control is coordinated with the feed control to give just the right blade pressure for smoothest, most accurate cutting of tubing and thin wall sections. In addition, the saw frame cannot drop accidentally and damage material or saw blade. Yes . . . here's *another* reason why Kalamazoo is synonomous with precision metal sawing at lowest cost . . . *another* reason why it will pay you to specify Kalamazoo Metal Cutting Band Saws. Three models, all available with coolant system and casters.

MACHINE TOOL DIVISION

Kalamazoo TANK and SILO CO.

1111 HARRISON ST., KALAMAZOO, MICH.

If you write maker identify as IEN - 12344

NEW JACK LOCATES ON ANCHOR BOLT — Empco JACK STYLE JS

- SELF-ALIGNS TO UNEVEN FLOOR
- EASILY LIFTS 8,000 LBS.
- SIMPLY TURN ADJUSTING NUT TO RAISE OR LOWER MACHINE
- VI-SORB MOUNTING PADS ABSORB VIBRATION

Where anchor bolts are used, this new Empco Jack Style JS will save considerable time in setting and keeping equipment level.
Tested to support 20 tons and lift 8,000 lbs., this Empco Jack is the answer to any machine installations. Anchor bolt hole through the jack assembly allows clearance for ¾" diameter bolt. This permits the Empco Style JS Jack to be used at the precise spot where equipment was designed to be best supported.
Available in three sizes: $1\frac{3}{4}$", 2", and 3" (minimum heights) with VI-SORB mounting pads as optional equipment.
Write for specifications and prices of complete line of Empco Leveling Jacks.

EMPCO "PRODUCT"

THE ENTERPRISE MACHINE PARTS CORPORATION

2737 JEROME AVENUE • DETROIT 12, MICHIGAN

If you write maker identify as IEN - 12345

TREET-ALL the HEVI DUTY *Multi Purpose* FURNACE for TOOL ROOM AND EXPERIMENTAL HEAT TREATING

With a maximum temperature of 1850° F., the TREET-ALL can easily handle your scale free hardening, carburizing, dry cyaniding and silver brazing.

The alloy muffle and gasketed door form a tight seal which simplifies atmosphere control. The furnace, quench tank, cabinet and controls form a compact, completely wired unit.

Write for Bulletin HD-1147-B8

HEVI DUTY ELECTRIC COMPANY

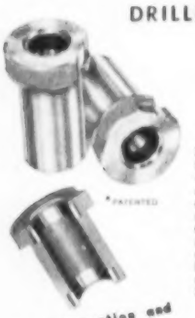
HEAT TREATING FURNACES HEVI-DUTY ELECTRIC EXCLUSIVELY
DRY TYPE TRANSFORMERS — CONSTANT CURRENT REGULATORS
MILWAUKEE 1, WISCONSIN

If you write maker identify as IEN - 12346

NOW IN STOCK

If you write maker identify as IEN - 12347

INCREASE PRODUCTION.. SAVE TIME & MONEY ON YOUR DRILLING OPERATIONS



MEYCO

Carbide Inserted Bushings last longer, cost less in the long run

Here is a bushing that combines the best features of steel and carbide; the strength of steel and the long life of carbide. First cost slightly higher than ordinary steel bushings; their life longer, many times as great. In addition to such obvious savings, MEYCO bushings increase the life of drills and reamers, produce accurate work for a longer period of time, save on machine down time and on nonproductive man-hours.

☆

Auto manufacturer says: "... the steel bushings previously used averaged about 28 hours life. MEYCO bushings ran 1,168 hours before they were unusable."

For information and prices write for Meyco Bushing Catalog No. 18.

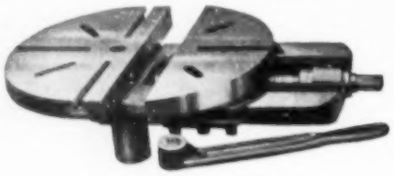
W. F. MEYERS CO., INC., BEDFORD, INDIANA

If you write maker identify as IEN - 12348

Try the MODERN

SAFETY DRILL TABLE

Under our FREE TRIAL OFFER



For Faster, SAFER Work in your Maintenance Department

Combines a drill table, a vise, a set of parallels and V block. No more lost fingers from hand held jobs that slip. No more 30 minute set-ups for a 1 minute drilling operation. Made in 6 sizes from 8" to 28" dia. We guarantee each Safety Drill Table will save its cost on labor alone in 6 months, to say nothing of plant down time when vital maintenance is delayed even a few minutes.

Write for Free Folder

Shows many typical set-ups, and use on radial drills. Complete specification on all models. Covers MONEY BACK GUARANTEE and 30 DAY FREE TRIAL OFFER.

MODERN MACHINE TOOL CO.
JACKSON MICHIGAN

If you write maker identify as IEN - 12349

INSULATING .. Paper tubes, acetate wrapped or resin impregnated

Source: **PRECISION PAPER TUBE CO.**
2061 W. Charleston St., Chicago 47, Ill.

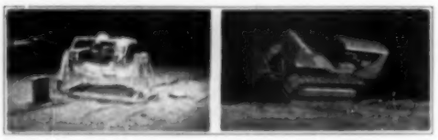
Produced on adjustable mandrels

New sizes, to 9 in. square or round, have been added to the company's line of spirally wrapped paper and asbestos tubes, previously described IEN 8830-49. The new tubes are made of dielectric Kraft or fish paper with an acetate over-wrapping, or with varnish dip or resin impregnation to meet given electrical insulating requirements. Applications are in power transformers and in coils of considerable size. Sizes and shapes are subject to specification within the overall range.

If you write maker identify as IEN - 12350

DRAFTING .. Scale size models made from drawings or product sketches

Source: **VISUAL PRODUCTION PLANNING INC.**
Leisenring Ave. & 6th St., Connellsville, Pa.

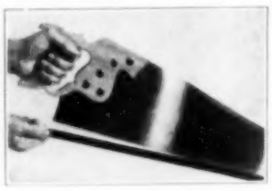


Made to specified scale

New service has been added to the company's production of scale size models, for plant layout purposes, to produce models of experimental or finished products to assist in engineering design work and in training. The company is prepared to work to finished drawings or to sketches and descriptions.

Identify as IEN - 12351

You can protect the teeth on your saws by applying the new soft-rubber strip known as Sweet-Saw-Guard. It is made by Sweet Rubber Company in Akron. Its inner surfaces are impregnated with castor oil to lubricate the teeth and prevent corrosion. A longitudinal slot holds it in place on the saw teeth. The unit can be rolled up and kept in a tool box during the time that the saw is being used.



All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12352

Fit the closure to the opening with **KINNEAR Rolling Doors**

ANY SIZE FOR ANY BUILDING

You can be sure of matching every door need with Kinnear Rolling Doors. These interlocking steel-slat doors of coiling upward action are built to any specified opening size. Write.

The KINNEAR Manufacturing Company

Factories: 2380-2400 Fields Ave., Columbus 16, Ohio
1742 Yosemite Ave., San Francisco 24, California
Offices and Agents in Principal Cities

Saving Ways in Doorways
KINNEAR ROLLING DOORS

If you write maker identify as IEN - 12353

LET ROBINSON DESIGN YOUR FORCED DRAFT FAN!

ROBINSON

FORCED DRAFT FAN

ROBINSON VENTILATING COMPANY
ZELIENOPLE, PENNA.

Designed to meet your specifications as to volume and pressure . . . High efficiency . . . Saves money in power cost during long service.
Let us select and design a Robinson unit for you.
For supply combustion air to Boilers . . . Open Hearth Furnaces . . . Reheat Furnaces . . . Heat Treating Furnaces . . . etc.

WRITE TODAY FOR BULLETIN No. 2101.

MAKERS OF FANS AND VENTILATING EQUIPMENT FOR FIFTY YEARS

If you write maker identify as IEN - 12354

Used in this typical application for sensing temperature of hydraulic oil.

made right to work right

BENDIX-FRIEZ

high-precision thermistors

Whether you use these temperature responsive resistors in standard or special models, you can be sure of this. *They'll match your needs* for resistance values, size, temperature coefficient, mountings and quality. Made in our own plant under carefully controlled conditions, Bendix-Friez Thermistors know no equal.

STANDARD TYPES FOR IMMEDIATE DELIVERY

Size (inches)	@ +30°C.	@ 0°C.	@ −30°C.
.140 x .75	45.0 ohms	86 ohms	194 ohms
.040 x 1.5	12,250 ohms	26,200 ohms	65,340 ohms
.018 x 1.5	35,000 ohms	82,290 ohms	229,600 ohms

Write for details.

FRIEZ INSTRUMENT DIVISION of Bendix AVIATION CORPORATION

1428 Taylor Avenue, BALTIMORE 4, MARYLAND
Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, N. Y.

If you write maker identify as IEN - 12355

You can salvage Valuable Parts-

—FOR LESS THAN 25¢!

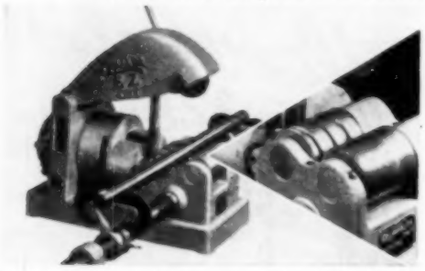
Including Labor, Materials, Burden

Elox Electron Drills* are production machines designed for fast removal of broken taps, drills, studs, etc., without harm to thread or wall, sticking or welding. Most units are completely self-contained, easily transported and come ready to plug in. As simple to operate as any drill press, Elox Electron Drills* are an insurance against loss of time, money and materials. Throughout the world, Elox machines salvage millions of dollars of work each year. Check your scrap today. There's an Elox Electron Drill* priced for any industrial requirement. Write today.

ELOX CORPORATION OF MICHIGAN
724 N. Rochester Road
Clawson, Mich.

If you write maker identify as IEN - 12356

Thousands of Cuts Per Sharpening with Portable Quijada E-Z Cutter



You'll find the Quijada E-Z Cutter the handiest pipe, tube and conduit cutter you've ever used. Weighs only 100 lbs. yet handles all cutting requirements in pipe from 1/8" to 2" (up to 3" in tubing and conduit). You get more cuts per sharpening of cutter wheel because Quijada's patented power driven rollers revolve pipe or conduit for constant cutting...no slipping. Comes with convenient foot switch. Built to last a life-time.

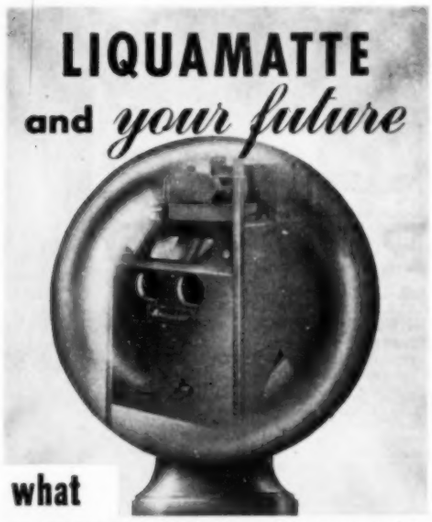
Unconditionally guaranteed by

QUIJADA TOOL DIVISION OF **GAINES-COLLINS**
5474 Alhambra Ave., Los Angeles 32, Calif.
Manufacturers of Automatic Threaders and Cutters for more than a Quarter Century

• **Write today for new catalog IE-11**

If you write maker identify as IEN - 12357

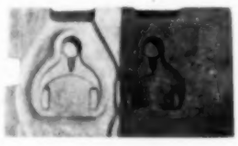
LIQUAMATTE and *your future*



what SIMPLIFIED WET BLASTING means to you

Through development of wet blasting, large savings have been made possible in finishing costs . . . and now Liquamatte makes wet blasting EVEN MORE practical, economical and convenient. The Liquamatte has 14 advanced design features that overcome the many operating difficulties usually found in wet blasting. Thus it reduces finishing costs to the very minimum. With the Liquamatte, "hand" finishes are produced mechanically in a matter of seconds, eliminating many tedious operations. Precision parts can be processed while holding tolerances of .0001". Scale and directional grinding lines are uniformly removed, greatly prolonging the life of expensive tools and dies.

Typical heat treated forging die, one half of which has been cleaned with the Liquamatte using a fine mesh Liquabrasive.



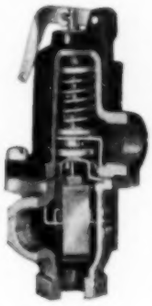
SEND TODAY FOR BULLETIN 23
It shows how Liquamatte's simplified design has reduced precision finishing costs to a new low.

American LIQUAMATTE
WHEELABRATOR & EQUIPMENT CORP. WET BLASTING
507 S. Byrkit St., Mishawaka, Ind.

If you write maker identify as IEN - 12359

VALVE . . Combination assembly for pressure and temperature relief

Source: McDONNELL & MILLER INC.
3502 N. Spaulding Ave., Chicago 18, Ill.



Series 202 is a new relief valve combining the company's No. 230 for action on predetermined pressure and its No. 201, previously described IEN-2791-52, to limit top temperature. Three ¾-in. pipe connections are provided for inlet and drain and for flow to fixtures. Hot water can move to the fixtures directly through the valve and the thermostatic element can keep close control.

The valve can be set to open at 75, 100 or 125 lb. as well as in a temperature range between 188 and 208 deg. F. It mounts two name plates to show the AGA symbol and rating and the opening pressure and btu. pressure relief capacity.

If you write maker identify as IEN - 12360

CLEANING . . Granular material dissolves in water for aluminum, tin

Source: OAKITE PRODUCTS INC.
116-A Rector St., New York 6, N. Y.

Efficient and safe

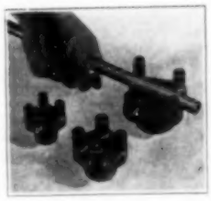
Composition 80-A is a new granular material for use in washing machines or soak tanks to clean aluminum, tin, soft metals. It is sprinkled over a full volume of water at operating temperature in preparing a tank solution and is stirred to dissolve. It is sprinkled over the surface of the water in the tank while a pump is running in application for spray washing machines.

Mixing proportion is ⅛ to 2 oz. per gal. of water with temperature at 140 to 160 deg. F. for washing machine use. It is 1 to 6 oz. per gal. at a temperature of 160 to 212 deg. F. for a soak tank. The work is rinsed with either hot or cold water following the cleaning operation.

If you write maker identify as IEN - 12361

CLAMP . . Lug equipped knobs to turn with a bar, pipe, tool handle

Source: JERGENS TOOL SPECIALTY CO.
714 E. 163rd St., Cleveland 10, Ohio



Speed Knob is a new design of handwheel for service on a jig or fixture, and certain types of machine, to provide torque to turn or clamp where ample leverage is required. This leverage can be supplied with a bar or tool handle between the lugs on the knob face. Material is malleable iron. The unit is available in specified sizes in blanks, plain, drilled, reamed or threaded.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12362

STANDOUT IDENTIFICATION *– at the right price!*

METAL NAME PLATES by

CHICAGO THRIFT-ETCHING CORPORATION

Spotlight your product with a sparkling metal name plate that reflects quality, lends distinction and assures permanent readability. Ask us to quote on name and instruction plates, dials, panels, etc. We also apply special finishes to aluminum products and parts including ANODIZING by the exclusive Alumilite process. Write today for information and quotations.

CHICAGO THRIFT-ETCHING CORPORATION
1555 North Sheffield Ave., Chicago 33, Illinois, Dept. F
SUBSIDIARY OF DODGE MFG. CORPORATION, MISHAWAKA, IND.

If you write maker identify as IEN - 12363

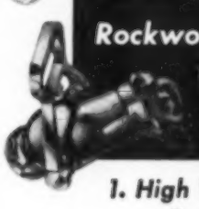
LET *Quincy* COMPRESSORS *meet your air requirements*

There is a complete range of Quincy Compressors available in sizes from 1 to 90 c.f.m. Quincy Compressors are designed for maximum efficiency and dependability. Quincy manufactures a complete line of both air and water cooled units in a variety of mountings. Write today for details and latest prices. Quincy Compressor Co., Dept. H-27, Quincy, Illinois.

QUINCY COMPRESSOR CO., Quincy, Illinois
Branch Offices: New York • Philadelphia • Chicago
St. Louis • Dallas • San Francisco

If you write maker identify as IEN - 12364

3-Way FIRE PROTECTION



Rockwood Triple-Action WaterFOG Nozzle Discharges:

1. High Velocity WaterFOG
2. Straight Stream
3. Low Velocity WaterFOG

The Rockwood SG-48 WaterFOG Nozzle puts out fires in flammable liquids and ordinary combustibles faster and with less water. Protects operator from heat and fumes, is easier to handle — and operates efficiently with a water pressure of 50 p.s.i. at the nozzle. For chemical and industrial plants, oil refineries, public buildings, municipal fire departments, etc. Approved by Underwriters' Laboratories, Inc., and Factory Mutual Laboratories.

Bulletin C501 gives you complete information. Write for your copy.

ROCKWOOD SPRINKLER COMPANY
Engineers Water . . . to cut fire losses
40 Harlow Street, Worcester 5, Mass.

If you write maker identify as IEN - 12365

Now! A NEW CONCEPT IN POWER PRESS OPERATION . . . .

Pictured is Famco's 18 ton open-back, inclinable power press featuring the exclusive Electromatic clutch.

SOLENOID OPERATED CLUTCH

famco *Electromatic*
18-TON POWER PRESS

CHECK THESE FEATURES

1. EFFICIENCY—Solenoid operated, positive locking, 3-point clutch gives far greater efficiency.
2. ECONOMY—Less maintenance, increased production, less losses.
3. SAFETY—Electrically controlled for safe operation, fooling.
4. LONG LIFE—Proved design, rugged, longer-lasting press.
5. EASE OF OPERATION—Feather-light foot or hand control.
6. SIMPLIFIED CLUTCH CONTROL—Selector switch for single stroke, neutral, or continuous operation, while press is on or is not running.

Famco now offers the most fool-proof, small power press clutch ever designed—the solenoid operated, nine-point jaw clutch. The hands selector switch provides ready changeability from non-repeat single stroke to continuous operation—from on to off positions—plus, a neutral position which locks the clutch, making hand or foot controls inoperative.

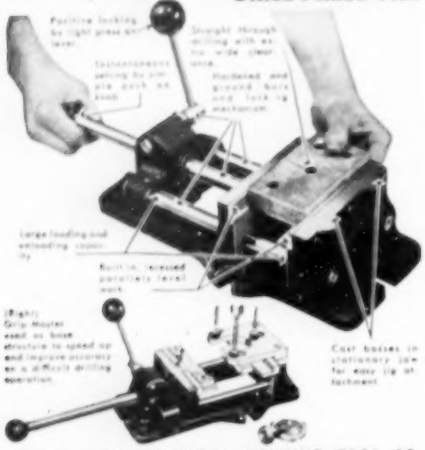
The Electromatic 18-ton Power Press gives the greatest versatility and ease of operation, resulting in increased efficiency and production. For further details contact your Dealer, or write for catalog.

famco COST CUTTING **machines**
FAMCO MACHINE CO. • 3110 Sheridan Road • KENOSHA, WIS.

If you write maker identify as IEN - 12366

Speed-up DRILL PRESS OPERATIONS

WITH THE HEINRICH *Grip Master* SCREWLESS DRILL PRESS VISE



Ask your dealer for demonstration or write for details.

NATIONAL MACHINE TOOL CO.
DEPT. 172-L
RACINE, WISCONSIN

If you write maker identify as IEN - 12367

Around the World it's

HOOVER BALLS

made of

CHROME STEEL - CARBON
STEEL - STAINLESS STEEL
BRASS - BRONZE AND
MONEL METAL

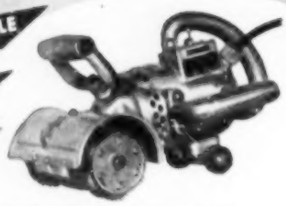
"America's Foremost Ball Manufacturer"

HOOVER BALL AND BEARING CO.
Ann Arbor, Michigan

If you write maker identify as IEN - 12368

ZIP OFF

SCALE
RUST
PAINT



with

AURAND CLEANING TOOLS

AURAND rotary chipping action quickly, easily thoroughly removes scale, paint, rust and other accumulation from any hard surface. Renewable cutter heads and foul proof cutting depth adjustment allow the unskilled operator to produce perfectly clean surfaces. Available in electric or pneumatic models. Write today for further information on cleaning cast iron, steel, brick, concrete, and other hard surfaces.

Get the time and money-saving facts

GET THE TIME AND MONEY-SAVING FACTS
WRITE TODAY TO DEPT. 649

AURAND MFG. & EQUIP. CO.
2643 Colerain Avenue • CINCINNATI, OHIO

If you write maker identify as IEN - 12369

CONVEYING . . Gravity take-up and boot designed for bucket elevator

Source: BEAUMONT BIRCH CO.
1503-7 Race St., Philadelphia 2, Pa.

No maintenance

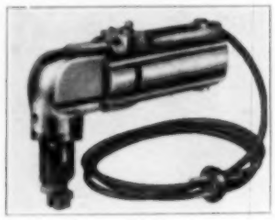
Take-up wheel in this new assembly, for the bottom of a vertically operating bucket elevator, is mounted in sealed roller bearings enclosed in sealed boxes filled with oil soaked waste. The boxes are secured to a structural frame that slides in vertical guides inside the water tight boot. A chute is provided at the front of the boot to feed materials that are to be elevated. The take-up assembly moves downward by gravity as the conveyor chain stretches. It is accessible through a door in the side of the boot so it can be raised when links are to be removed to restore original chain length.

The boot will keep materials dry even though several feet of water may be in the elevator pit. The new assembly can be specified to replace screw type bucket elevator take-ups of the company's manufacture that are now in service. Sizes are subject to specification.

If you write maker identify as IEN - 12370

NIBBLING . . Portable electric tool for 14 gage steel, weighs 7½ pounds

Source: FENWAY MACHINE SALES CO.
18-22 So. 15th St., Philadelphia 2, Pa.



Operator guides it

Universal motor for operation on 110-volt current is assembled with a reciprocating drive in a cast aluminum frame in this new Little Wonder nibbler. The mechanism drives a cutter that can be guided by the operator to follow a straight or irregular outline for a minimum ¾ in. radius.

Rotating parts are mounted on anti-friction bearings. Gears are hardened. Overall length is 10 inches. Equipment includes a three-conductor 8-ft. rubber cord and plug, one extra punch and die and the necessary wrenches.

identify as IEN - 12371

Kanamite trade names a new fine grain light weight aggregate made by blowing up individual grains of clay in a furnace. It is a development of Armour Research Foundation in Chicago. Concrete mixes, employing the material in place of sand, are highly fluid even when water content is low. The concrete can be pumped through a rubber hose to fill forms on a construction job. Grain is from 0.0116 to 0.0882 inch in the range found most useful so far. Each grain is a hollow sphere.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12372

SHIPPING COSTS GO DOWN

CORROSION LOSSES STOP

WITH MARVELLUM VPI® WRAP

• Time consuming slushing, expensive wraps and seals, messy and costly cleaning are no longer necessary if you use Marvellum VPI. Developed for Government shipments during the war, VPI is now available to all. It's the ideal wrap for shipping Ferrous metal parts. A special coating on the paper vaporizes and forms an invisible protective film around the item wrapped, preventing corrosion.

It is easy to use — just fold the paper over the part. Tight seals, rust-preservative oils, puncture-proof wrappings or direct contact with the chemical are not necessary. Yet Marvellum VPI protects against rust for years. Open the wrapping and there's the part as bright and clean as when it was made.

Marvellum VPI is available in sheets, envelopes or special containers. Marvellum has complete facilities under one roof for designing, coating and producing VPI Wraps. Also makers of a wide range of other Barrier Materials, Government Approved, for product protection.

Write for FREE Booklet and name of nearest distributor.

The Marvellum Company
20 APPLETON STREET HOLYOKE, MASS.
First and Foremost in VPI Protection

If you write maker identify as IEN - 12373

*flamefoil**

finished CANVAS for PROTECTION

RESISTANT to
- FIRE
- WATER
- WEATHER
- MILDEW

Flamefoil canvas gives extra margin of safety against fire in your plant. . . . . reduces your losses.

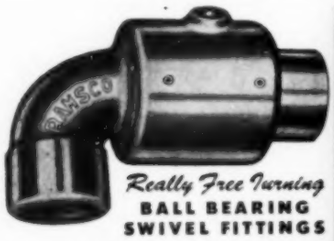
SEND AT ONCE FOR BOOKLET
"FLAME RESISTANT FABRICS"

*Manufactured under Patents Nos. 2,044,176 and 2,299,612 . . . . . others pending.

FLAMEFOIL GUARDSMEN

PHILADELPHIA TEXTILE FINISHERS, Incorporated
102 LAFAYETTE STREET
NORRISTOWN, PA.

If you write maker identify as IEN - 12374



Really Free Turning
BALL BEARING
SWIVEL FITTINGS

RAMSCO

FOR LIQUID GASES, STEAM, AND CHEMICALS. HOT OR COLD SERVICE. CONTINUOUS OR OCCASIONAL ROTATION.

360° FREE ROTATION—1, 2 AND 3 PLANES FITTINGS AND PRESSURES TO 15,000 P.S.I. AND TEMPERATURES TO 750° F.

Over 500 sizes, types, styles. Low pressure fittings ⅜" to 14". High pressure and high temperature ⅜" to 6". Universal service (U. S. type) fittings and pressures to 1,000 psi. Temperatures to 750° F. asbestos packed. When packed with teflon ideal for corrosive service. Gear driven types for loading racks also available.

Send for complete catalog and prices. State kind of service, pressure, temperature, pipe size and indicate style at right, threaded, flanged or weld ends.

RAMSCO

RASMUSSEN MFG. CO.
12305 INDUSTRIAL AVENUE
HOLLYDALE, CALIFORNIA

If you write maker identify as IEN - 12375

IF YOU HAVE

OR PROBLEMS . . .

CALL YOUR
FORT WORTH V-DRIVE DISTRIBUTOR

HE EITHER HAS IT IN . . . .
OR CAN CONTACT THE
NEAREST
FORT WORTH WAREHOUSE
THIS MEANS
Quick

DELIVERY FOR
"OD" and Belt Rim
SHEAVES

FORT WORTH MULTI-V-BELTS

MULTI CORD V BELTS
STEEL CABLE V BELTS
SUPER CORD V BELTS

Ask about Fort Worth interchangeable hub sprockets — they use V belt sheave bushings — for immediate delivery without rewiring

WRITE FOR INFORMATION

FORT WORTH STEEL & MACHINERY CO.

Dept. 211, 3600 McCart Fort Worth, Texas

If you write maker identify as IEN - 12376

"HOLD EVERYTHING"

with this strong, open-side, all-purpose handy vise.

Takes work from 3 sides
Range from 2 3/8" to 8 5/8"
Positive non-slip grip

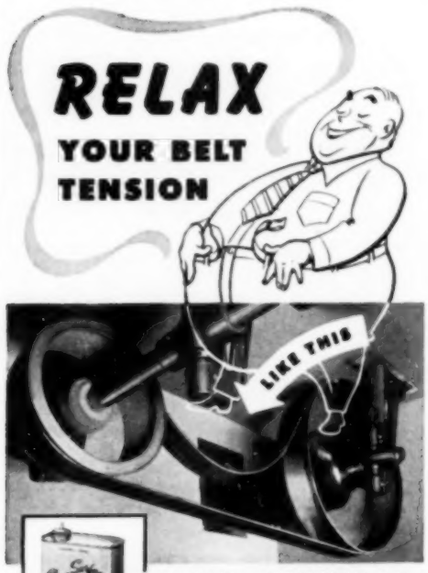
Ideal for valves, manifold fittings and all other hard-to-hold items.

● Heavy, one-piece malleable cast-iron body is virtually indestructible. Takes work from 3 sides. Four easily replaceable dies in lower jaw provide positive grip to hold work safely in balanced non-slipping position. Easily installed non-scarring soft jaws also available. Vise screw made of toughest steel has coarse Acme thread for rapid adjustment. Counterbalanced handle, mounted at efficient arm height, can be quickly extended for extra leverage. Wide range replaces three ordinary vises. Far safer and faster than chain tongs. For folder and prices address . . . .

BAKER OIL TOOLS, INC.
BOX 2274 TERMINAL ANNEX, LOS ANGELES 54, CALIFORNIA

If you write maker identify as IEN - 12377

RELAX YOUR BELT TENSION



CLING-SURFACE

MAKES BELTS
1. WORK BETTER
2. LAST LONGER
3. SAVE POWER

Stop running your transmission belts *tight!* Belts run under high tension, stretch and constantly require "take-ups" which cause costly down time. They increase the friction load, waste up to 50% of your power and place needless strain on bearings and shafting.

By merely applying Cling-Surface to your belts, you greatly increase their "grip" and by relaxing the tension, you actually *increase* the surface areas the belts "cling" to. This "slack belt" operation practically eliminates belt repairs, makes belts, bearings and shafting last longer and delivers MORE POWER to your machines.

The ONLY belt preservative in existence that has passed U. S. Government requirements, Cling-Surface is also the ONLY brand that DARES to recommend this economical, trouble-free, "slack belt" way to end belt worries. A trial will convince you! Sold on MONEY BACK GUARANTEE since 1896. Ask your mill supply man or,

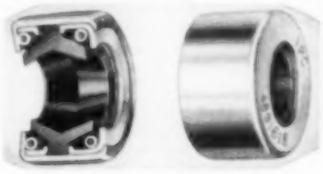
SEND FOR THIS FREE BOOK ▶
"The Truth about all Belt Dressings"

CLING-SURFACE CO. 1042 NIAGARA STREET BUFFALO 13, NEW YORK
CLING-SURFACE CO. OF CANADA, LIMITED, TORONTO, ONTARIO

If you write maker identify as IEN - 12379

SEALING . . Cartridge assembly keeps water out of a control switch

Source: GRATON & KNIGHT CO.
324 Franklin St., Worcester 4, Mass.



A G & K-International product

Double lip synthetic element in this new miniature shaft seal is backed by a pair of garter springs and is enclosed in a metal housing measuring about ⅝ in. in outside diameter. It applies on the operating shaft of a control switch to keep water out of the switch housing. It is known as the AR5 ordnance lighting switch. It was made to specification.

If you write maker identify as IEN - 12380

CASTINGS . . Shell molded parts, sand plastic molds, to specification

Source: TRUCAST COMPANY
8-14 Mary St., Newark 5, N. J.

Cores or molds to your order

The company announces installation of facilities to manufacture the required dies, to produce the sand-plastic molds employed in the new foundry process known as shell molding, and to produce precision castings from these molds. It is at present in production in its own foundry on castings made of aluminum and copper base alloys. In addition it is prepared to manufacture the shell molds for other foundries to cast parts in gray iron, malleable iron, Meehanite metal. In the latter case the company makes the molds and transports them to the purchasing foundry where the castings are poured, cleaned and shipped.

Size range is from very small castings to units weighing about 20 pounds. Usual flask size is 12 by 18 inches. Means have been developed to handle cored work as well as plain.

If you write maker identify as IEN - 12381

HEATING . . Rubber mat, electrically heated for worker comfort

Source: INTERSTATE RUBBER PRODUCTS CORP.
906-10 Avila St., Los Angeles 12, Calif.

Electro Mat is a new 14 by 21-in. rubber mat with a built-in electric heating element rating 100 watts, after it has come up to foot warming temperature. The unit is intended for workers who must stand in cold locations. Weight of the new mat is about 5 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12382

the double-duty micrometer!

You're in for a real surprise the first time you use a Federal MIKEMASTER . . . either as an *indicating micrometer* or as an *indicating snap gage* for measuring duplicate parts. Here are Mikemaster's big features that make it superior to regular "mikes":

- BUILT-IN DIAL INDICATOR with clear graduations for quick size checking down to a .0001".
- CONSTANT ANVIL PRESSURE eliminates errors of "feel" . . . same high accuracy no matter who uses Mikemaster.
- RETRACTABLE LOWER ANVIL for easy (non-scratching) insertion of workpieces.

Try the Mikemaster yourself. Write for a free demonstration. FEDERAL PRODUCTS CORPORATION, 2911 Eddy Street, Providence 1, Rhode Island.

FEDERAL
Largest manufacturer of indicating type gages . . . exclusively.

If you write maker identify as IEN - 12383

For Dependable, High-Pressure Connections

High pressure connections are the best electrical connections. They are also the best mechanical connections because tests show that they have better ability to stay tight — are trouble-free once installed.

All connectors in the famous BLACKBURN Hi-Strength Line produce high pressure connections. Also, they are priced right to give you low cost connections that you can depend upon . . . Be sure to specify BLACKBURN!

SEND FOR CATALOG
JASPER BLACKBURN CORPORATION
33 Madison St. • St. Louis 8, Mo. • CEntral 5887

If you write maker identify as IEN - 12384

ASK FOR YOUR FREE COPY!

IT'S JAM-PACKED WITH MONEY-SAVING IDEAS

There are dozens of ways the Zip-Lift can help you cut costs with "thru-the-air" handling. The Zip-Lift is easy to install. Hang it up on hook, jib, or trolley, and plug it in. Handles loads up to one ton. Write for Bulletin H20-1. This fully illustrated bulletin suggests many ways you can save time, effort, and money in your plant. Write today.

HARNISCHFEGER CORPORATION
4400 W. NATIONAL AVENUE • MILWAUKEE 46, WISCONSIN

If you write maker identify as IEN - 12385

Now Available

STAINLESS STEEL PLATECOILS

to SAVE YOU 50% in TANK HEATING and cooling

You SAVE 50% in tank SPACE
A 22" x 47" Platecoil gives the same heat transfer surface as 52 ft. of 1½" pipe. Platecoil thus saves about 50% over equivalent pipe coil in space inside your tank.

You SAVE up to 50% in initial COST
The initial cost of Stainless Steel Platecoil is often 50% or more below the cost of equivalent pipe coil. Less time is required to install Platecoil with corresponding saving in installation labor.

You have 50% LESS WEIGHT to handle
Weighing only about half as much as equivalent pipe coil, Platecoil is easy to handle.

You SAVE 50% in maintenance LABOR
The Platecoils can be replaced in a matter of minutes and without emptying the tank. There is no need for workmen to get inside the tank.

Send for complete technical manual and descriptive Bulletin No. P56.

PLATECOIL
Division
KOLD-HOLD MFG. CO.
LANSING 4, MICHIGAN

If you write maker identify as IEN - 12386

NEW FRACTIONAL H.P. STARTER HAS ALL THE FEATURES!

- Quick-make, quick-break contact mechanism
- Single or double pole construction
- Double-break contacts of fine silver
- Modern styling
- Straight-thru wiring with convenient terminals—generous wire space
- Dependable melting alloy type overload protection—trip-free
- Definite trip indication
- Interchangeable overload relay units accessible from the front
- Open type starter can be used with standard switch box and flushplate

RATINGS: Double pole: 1 H.P., 115—230 volts A.C. or D.C. Single pole: 1 H.P., 115—230 volts A.C. and ½ H.P., 115—230 volts D.C.

Write for Bulletin 2510A. Address Square D Company, 4041 N. Richards St., Milwaukee 12, Wisconsin. ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY

If you write maker identify as IEN - 12387

HANSEN

QUICK CONNECTIVE "ST" straight-through COUPLINGS

Without Shut-off Valves

Connected Hansen "ST" Coupling provides free flow of liquid or gas without pressure drop.

To connect, pull back sleeve and push plug into socket—plug automatically locks in place. To disconnect, merely pull back socket sleeve. Smooth unrestricted bore permits full flow with no impedance. Size range for general use from ¼" to 2½". Special types of ¼", ½", and ¾" straight-through couplings also available for steam line connections.

Also general and special purpose one-way shut-off and two-way shut-off couplings. Write for catalog.

THE HANSEN MANUFACTURING COMPANY
8011 WEST ERIE STREET • CLEVELAND 11, OHIO

If you write maker identify as IEN - 12388

In forty-nine years of manufacturing gears we've learned that solving the knotty problems put to us by some of our customers is well worth the time and trouble involved. For, in addition to satisfied customers, it provides us with available answers to the same problems whenever they arise again.

Then, too, it gives our customers ever greater confidence in our ability to master their many gear requirements.

That's why your gear problems—whether great or small—will always be welcome here. THE EARLE GEAR & MACHINE COMPANY, 4707 Stenton Ave., Phila. 44, Pa.

EARLE GEARS

It's good business to do business with EARLE!

If you write maker identify as IEN - 12389

PUMP . . Centrifugal sump assembly with motor housing as float control

Source: FAIRBANKS MORSE & CO. 606 S. Michigan Ave., Chicago 5, Ill.

Enclosed controls

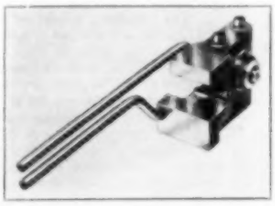
Stainless steel housing on this new pump encloses the motor and operating switch. It functions as a float to control the pump operation at the same time that it seals the operating components. The complete assembly can be submerged in water in the sump without damage to the motor.

Operating range is between 5½ and 8½ in. for water level measured from the bottom of the sump. The pump requires clearance laterally of 12¼ in. and a minimum sump depth of 16 inches. It stands 14½ in. in overall height and delivers to a 1¼-in. discharge pipe.

If you write maker identify as IEN - 12390

DRILLING . . Work holding jig to secure and hand position small work

Source: ESCO ENGINEERING CORP. 1938-42 E. Woodbridge St., Detroit 7, Mich.



Mijit Junior

Shut height is variable in this new jig between 1 and 1½ inches. Working area is 1 by 1½ inches. The jig is equipped with 6-in. bar type handles with which a work piece can be held in place and moved to center under a drill on a machine table.

Overall dimensions at the base are about 1¾ by 2¾ inches. Overall height is 2¼ in. in closed position. The working parts, including the posts, rack and the gear, are hardened and ground.

Identify as IEN - 12391

Yale and Towne announces availability of the Marvel Lift-O-Matic drum handling attachment, previously described IEN-12803-51, on any of its engines or motor driven fork lift trucks. The attachment replaces the truck forks. Drums can be tiered or removed at maximum fork height without the use of pallets. The attachment is available to handle one drum at a time or several. It has a cradle foot against which a drum rests and an adjustable pivoted head carrying a pair of fingers. These fingers close on a drum chime to pick the drum off the floor.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12392

HOT MELT PLASTIC COATINGS for GEARS • TOOLS • PRECISION PARTS

BEFORE SECONDS AFTER

Dip

Coated • Protected

DIP-PAK Protect vital, expensive tools, gears, and machined parts during storage and shipping with Fidelity's durable, transparent plastic coatings. Merely melt coating briquette, dip parts, cool. Lasts indefinitely. Tough; abrasive, moisture, rust resistant. To remove, slit, peel. Re-melt, re-use coating. Economical, practical, rapid. Protect parts; save money.

Write for Bulletins and Free Samples
Fidelity Chemical Products Corp.
471 Frelinghuysen Avenue, Newark 5, N. J.

If you write maker identify as IEN - 12393

COSMOLINE COATED GUN COMPLETELY DEGREASED

IN LESS THAN 4 MINUTES

Four 20mm. guns heavily coated with Cosmoline are raised from the degreaser in a clean, dry condition, ready for subsequent operations.

WITH A PHILLIPS Electric VAPOR DEGREASER

HERE was a really tough metal cleaning problem. Cline Electric Manufacturing Company, Chicago, had to remove Cosmoline from 20mm. guns before modification operations on the guns. Cline purchased a Phillips electric batch-type degreaser to handle the job. As a result sixteen guns are being degreased per hour at a savings of 85% on cleaning costs per gun.

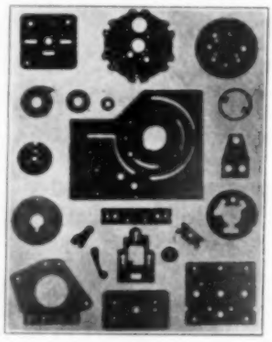
Here is another instance of how Phillips degreasers cut costs through faster, more thorough, more economical metal cleaning. For the answer to your degreasing problems, check with Phillips.

SEND FOR YOUR FREE COPY OF NEW ILLUSTRATED DEGREASER BULLETIN

Phillips MANUFACTURING COMPANY
3461 Touhy Avenue • Chicago 45, Illinois
Engineered Metal Cleaning Equipment

If you write maker identify as IEN - 12394

LAMINATED PLASTIC AND VULCANIZED FIBER PARTS CANVAS, LINEN AND PAPER BASE PHENOLIC SHEET STOCK



INSULATORS
WASHERS
DISCS
GEAR BLANKS
PANELS
AND ANY SPECIAL PARTS YOU NEED

Prompt quotations to your blueprints and sketches with data on quantity for parts or sheet stock.

NORTHERN PLASTICS CORP.
Market at Front St. La Crosse, Wis.

If you write maker identify as IEN - 12395

Write For 32 Page Catalog

Listed by Underwriters Laboratories

Western N. Y. Representative Wanted

- Pump Controls
- Duplex Pump Alternators
- High and Low Level Cutoffs
- High and Low Level Alarms
- Multi-Level Signals
- Liquid Metering
- Special Controls and Panels

CHARLES F. WARRICK CO.
1965 W. Eleven Mile Rd.
Berkley, Mich.

Warrick FLOATLESS LIQUID LEVEL CONTROLS ELECTRODE TYPE

If you write maker identify as IEN - 12398

Withstands temperatures from 500° to −85° F.

Originally developed to meet the drastic temperature range aircraft encounter, Varglas Silicone Electrical Tubing and Sleeving may be able to lick your tough insulation problems! Here's why: Varglas Silicone is . . .

- **Efficient at 500° F.** — flexible at −85°F.
- **Moisture-Resistant** — to lubricating oil, salt water, acids and mild alkalis.
- **Fire-Resistant** — non-flaming in nature.
- **Abrasion-Resistant** — pliable and non-fraying.
- **Dielectrically Strong** — average readings up to 7,000 volts.

Available in various NEMA colors in several types and grades of tubing, sleeving, lead wire and tying cord.

VARFLEX Sales Co., Inc.
306 N. Jay St., Rome, N. Y.

If you write maker identify as IEN - 12397

. . . an adjustable Precision Feed Controller

. . . retards the feed speed for ANY PORTION or for ALL of the feed-travel

MAKES EVERY OPERATOR AN "EXPERT"

- Applicable to any feeding mechanism where precision control is desirable.
- Controls the pressure at work surface or at any stage of penetration or approach.
- Increases tool life . . . tools require less frequent sharpening.
- Reduces work rejects . . . insures uniformly clean, high quality work even by the inexperienced.
- Adjustable for from 1 to 1000 lbs. retarding pull. . . . Completely self-contained unit . . . standard unit available in 2", 4", 6" and 8" stroke. Special intermediate strokes obtainable up to 9". . . . Installed by simple bracket mounting . . . actuated by moving element of feed or feed table . . . virtually fool-proof. Inexpensive.

Write for informative bulletin DC-208-A.

NATIONAL PNEUMATIC CO., INC.
125 AMORY STREET, BOSTON 19, MASS.
NEW YORK PHILADELPHIA CHICAGO DETROIT

NP "POWER-CHECK" precision FEED CONTROLLER

* Trade Mark

If you write maker identify as IEN - 12399

SEALING . . Pressure vessel cover holds against pressure and vacuum

Source: CLEARING PROCESS COVER CORP.
5618-22 W. 65th St., Chicago 38, Ill.

Opens, closes quickly

New design has been added to the company's line of sealing covers for pressure vessels, previously described IEN-8002-51. The new unit is lowered to position and then turned through a short arc to come under integral lugs on the pressure vessel as compared to the previous design which employed a hinged double shouldered ring. Both designs are available to meet requirements.

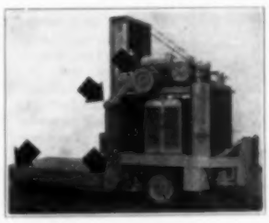
The construction employs a flanged piston fitted with sealing gaskets to hold against pressure both downward and upward. The piston rides in the cylindrical throat of the cover assembly beneath the cover plate. When pressure is exerted inside the pressure vessel, forcing the piston upward, the plate is held up also so it locks in place and cannot be removed as long as there is pressure inside the vessel.

Sizes range to 42 in. in diameter for working pressure to 600 lb. and for temperature to 300 deg. F. Minimum clearance, ¼ in. at the locking surfaces, prevents sticking or jamming due to collection of materials on these surfaces. Overhead handling equipment is available for covers that are too heavy to be handled manually. The company is prepared to supply complete pressure vessels with covers assembled or to make covers under certain conditions to fit equipment now in service.

If you write maker identify as IEN - 12400

TRUCK . . Electric power lift design has winch to load and unload platform

Source: ELWELL-PARKER ELECTRIC CO.
4060 St. Clair Ave., Cleveland 3, Ohio



Power does the work

New design of the company's die and equipment handling power lift truck places the operator at sufficient height to give him a clear view of his work and the area in front of this new truck. Electric power steering assists in guiding the truck and its heavy load into and out of position. Several sizes in the line rate 5 to 25 ton load.

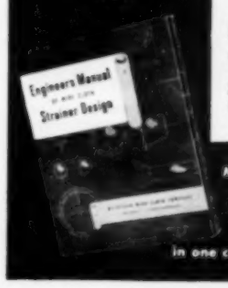
The truck mounts a motor-driven winch that winds a wire rope on each side. These ropes can be directed over idler sheaves to the front of the truck to pull loads onto the platform. They can be returned around the sheaves at the front edge to unload the platform. The arrangement permits pulling heavy tools from presses, forging machines, storage racks or reversing to unload the tools from the truck. It also permits pulling units of heavy equipment on or off the platform for relocation in a plant. The truck illustrated rates 15 ton. It has a 72 by 48-in. platform and lift height to clear 47 in. above the floor. Battery or engine-generator can be employed.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12401

How To Design Your WIRE CLOTH STRAINER

This new ENGINEER'S MANUAL takes you on a step-by-step course of designing wire cloth strainers to meet your own special requirements. Discusses weaves, meshes, metals, shape and construction, flow rate, fabrication processes. Write today for your free copy.



MICHIGAN WIRE CLOTH CO.
2075 Howard Street
Detroit 16, Michigan

MICHIGAN
Draws the Wire
Weaves the Cloth
Fabricates the Part
in one continuous production line

If you write maker identify as IEN - 12402

Vancouver's Fireboat

Stops Dock Holocaust

KERMATH MANUFACTURING COMPANY'S 550 H.P. ENGINES powered the fireboat that "hit the Vancouver dock fire like Niagra Falls". ROCKFORD POWER TAKE-OFF CLUTCHES transmit the power to the high-pressure fire pumps. Let ROCKFORD clutch engineers help develop power transmission for your heavy-duty equipment.

B-W ENGINEERING MAKES IT WORK
B-W PRODUCTION MAKES IT AVAILABLE
ENGINEERING BULLETIN SENT ON REQUEST

ROCKFORD CLUTCH DIVISION
303 Catherine Street, Rockford, Illinois, U. S. A.

ROCKFORD CLUTCHES

If you write maker identify as IEN - 12403

If you write maker identify as IEN - 12404

GET THE EXTRA ADVANTAGES OF
Stepless Heat Control
FROM 350°F. TO 1850°F.

WITH THESE LOW COST TEMCO ELECTRIC FURNACES

Economical to own and operate, TEMCO models RCE (illustrated) and GTP are ideal "utility" units for the laboratory, shop or plant. Exceptionally handy for general lab work, production control and heat treating. Both models have built-in TEMCOMETER stepless control which is unaffected by line voltage fluctuations and lets you select *and hold* any temperature from 350° to maximum . . . indicating-type pyrometer calibrated in F. and C. scales . . . embedded heating element completely surrounds chamber . . . cast aluminum body . . . special insulation. Chamber dimensions: Model RCE — 4⅝" W., 4¼ H., 6" D.; Model GTP — 4" W., 3⅝" H., 5⅝" D.

Price Model RCE Complete For 115V. or 230V. AC $45.00
Price Model GTP Complete For 115V. or 230V. AC $47.50

Write for data and dealer's name

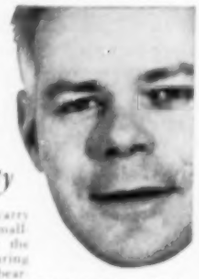
THERMO ELECTRIC MANUFACTURING CO.
482 Huff St., Dubuque, Iowa

If you write make identify as IEN - 12405

if loads are your problem use

GUIDEROL®

bearings for greater capacity



Are you looking for a way to carry greater loads more efficiently in smaller spaces — a way to improve the performance of your tougher bearing applications without increasing bearing space? You'll find the answer in McGill Guiderol Roller Bearings because guided rollers permit full type roller construction without any possibility of roller skewing with limited misalignment. Capacity wasting cages are eliminated and still excessive internal looseness can be avoided. They are available in the MT and CT series — interchangeable respectively with roller bearings of needle type dimensions and ball bearings of single and double row dimensions.

GREATER CAPACITY and ANGULAR RIGIDITY

As no cages are needed, Guiderol Bearings use a full complement of small diameter rollers over which greater loads can be distributed. Also rollers of full race width provide full race support and increased angular rigidity. One Guiderol will often replace two ordinary bearings.

Rollers Roll More Load

Write today for the new Catalog No. 52. McGill Manufacturing Co., Inc., 100 N. Lafayette St., Valparaiso, Indiana

McGILL precision bearings

If you write make identify as IEN - 12406

Leaking Air is an expensive luxury

If you can't afford it, HILLS-McCANNA *Saunders Patent* **diaphragm valves will put an end to it!**

WRITE FOR LITERATURE

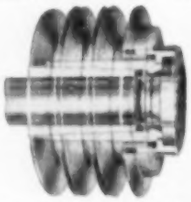
HILLS-McCANNA
Saunders Patent
diaphragm valves

HILLS-McCANNA COMPANY • 2347 Nelson Ave., Chicago 18, Ill.

If you write make identify as IEN - 12407

WHAT DO YOU KNOW

About Speed Control For Profit?



1. Do you know the exact speeds at which your machines should operate to give you maximum profit?

2. Do you know that the difference between the right speed and almost the right speed is frequently the difference between profit and loss?

3. Do you know that American Adjustable-Speed Sheaves can give you stepless speed control to meet variations in operating conditions and operator efficiency?

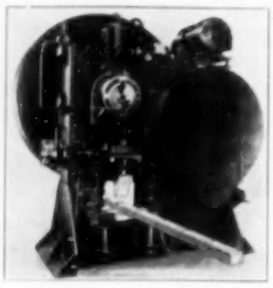
4. Want the answers to these and other questions? Then fill in and mail the coupon below today and we'll send you a Free Bulletin with the right answers. Do it now.

THE AMERICAN PULLEY COMPANY
4340 Wissahickon Ave., Philadelphia 29, Pennsylvania
Gentlemen:
Quick! Rush me your complete bulletin on The AMERICAN Adjustable Speed Line.
Name _____
Address _____
City _____ Zone _____ State _____

If you write make identify as IEN - 12408

SHEARING . . Billet machine adapted to break nicked shell billets

Source: **BUFFALO FORGE CO.**
488-92 Broadway, Buffalo 5, N. Y.



For a killing job

The illustration shows a view of the company's converted billet shearing machine. Its bar hold-down is cut away to show the relative positions of a length of nicked billet and the punch employed to break it. The hold-down is operated pneumatically to drive a wedge that holds the billet bar when breaking pressure is applied.

Standard equipment includes an air operated jaw clutch that will stand up under heavy shock loading, welded steel plate housing, tool steel knife seats and knives as specified. Capacities in the several machine sizes in the line range from 325 to 2,200 ton.

If you write make identify as IEN - 12409

HEATING . . Gas fired burner rates 7,000 to 45,000 btu. per hour

Source: **BURDETT MFG. CO.**
3431-35 W. Madison St., Chicago 24, Ill.

Made in any length

Radi-Heat trade names a new burner design based upon a fluted refractory as shown in the illustration. Single units can be mounted end to end to provide a continuous burner surface on a pipe manifold. A wide range of mixture ratios and pressures can be obtained. The burner will not back-fire or blow itself out at any manifold pressure.

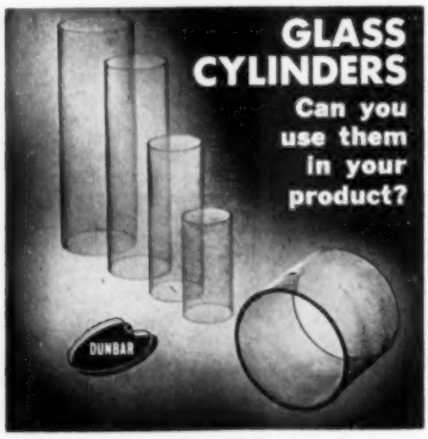
The design eliminates fluted or internal baffles in which foreign matter can accumulate. The gas retaining section of the refractory provides for fast light up. Adjacent burner threaded parts are of dissimilar metals to avoid seizing after continuous operation at high temperature.

Identify as IEN - 12410

Diebold Inc. of Canton, Ohio, suggests its portable 20-pound motorized camera to photograph your confidential papers for microfilm records as supplementary equipment to your centralized microfilming operations. The camera takes a 50-ft. daylight film magazine. It can be kept in your own office along with the film until a hundred pictures have been made. Camera cost is $750.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write make identify as IEN - 12411



For dispensers, merchandise displays, visible hoppers, lighting fixtures, sight feeders, meters, columns or any other applications, DUNBAR offers you a wide variety of cylinder sizes in economical quantities. Or we will fabricate blown glass cylinders to your specifications. We invite your inquiries. Write Dept. 974 for our Glass Cylinder catalog No. C-51.

Dunbar Glass Corporation

DUNBAR, WEST VIRGINIA
NEW YORK • CHICAGO • LOS ANGELES

If you write make identify as IEN - 12412

GRAVER

FIELD ERECTION IN ALLOYS

Field erection of special steels, stainless, alloys, clads and aluminum requires special techniques and specially trained crews. Graver's experience — as old as the use of alloys — assures successful, long-lasting process equipment.

GRAVER TANK & MFG. CO., INC.
EAST CHICAGO, INDIANA
NEW YORK • CHICAGO • PHILADELPHIA • WASHINGTON
DETROIT • CINCINNATI • CATASAUQUA, PA.
HOUSTON • SAND SPRINGS, OKLA.

If you write make identify as IEN - 12413

6 major improvements in Edmont gloves

to fit your job requirements

New flexible NEOX (reinforced neoprene) coating gives firm, easy grip

Never before a chemical and wear-resistant coated glove with such flexibility and grip. Far superior to ordinary neoprene. Most widely applicable of all coated work gloves.

Redmont heavy-duty NEOX gloves have improved safety-grip finish

Finish cured into 30% thicker NEOX coating. Won't chip or peel. Safest glove made. Seamless wearing surface, extra-wide thumb span, curved fingers.

New Grappler plastic gloves far outwear leather, other plastics

Coated with DUROX, 50% longer wearing, *non-slip* plastic, and made in new wing thumb, pre-flexed finger pattern that perfectly fits the hand.

Hand-fitting Monkey Grips with plastic coating

Second only to Grapplers for long wear and made in same pattern. Fits the hand all over; no bagginess; comfortable grip.

New white Sani-Gluv meets special sanitation requirements

Liquid-proof all-white plastic coating in our new hand-fitting pattern with wing thumb and pre-flexed fingers.

Improved white-fabric-lined Grab-its, approved by safety directors

Long-wearing, sure-gripping rough finished natural rubber, bonded to new and sturdier white fabric.

Test these gloves at our expense: Send brief description (on business letterhead) of your operations, materials handled and temperature condition. Without cost, we will forward samples of the type gloves we recommend for testing on-the-job. Address

Edmont Mfg. Co., 1226 Walnut Street, Coshocton, Ohio
World's largest maker of coated industrial gloves

Edmont

Edmont job-fitted gloves

If you write maker identify as IEN - 12415

Write for this bulletin on Naylor Fabrication Service. Along with helpful data on standard fittings for light-weight pipe, it presents special fabrications to save material and labor in piping layouts. Send for your copy today.

Ask for Bulletin No. 525

NAYLOR PIPE COMPANY
1235 East 92nd Street, Chicago 19, Illinois
New York Office: 350 Madison Avenue, New York 17, N.Y.

If you write maker identify as IEN - 12416

Well Stacked!

Let our rack specialists lay out your new installation for maximum efficiency or study your present operation for possible improvements.

PROPER STACKING OF GOODS SAVES SPACE AND LABOR

E.M.I. engineers, fabricates and installs complete rack systems. Our designs offer the greatest in strength and safety, incorporating our square welded steel tubing and simplified assembly methods.

- **PALLET RACKS**
- **PORTABLE STOCK RACKS**
- **COIL RACKS**
- **SPECIAL RACKS FOR ALL APPLICATIONS**

Write for our catalog

EQUIPMENT MFG. INC.
544 Hoover Road, Detroit 5 Michigan

If you write maker identify as IEN - 12418

GAGE . . Vernier design adjusts to a 12 in. work height

Source: L. S. STARRETT CO.
100 Starrett St., Athol, Mass.

No. 454 is a new gage in the company's line of measuring instruments in which the vertical bar carries a 13-in. scale to permit set-up and measuring over a 12 in. range in thousandths of an inch. The gage is made of steel with ground finish on all surfaces. The bottom of the base and the scriber are hardened and lapped. The hardened bar carries machine divided graduations. The scriber can be removed for sharpening or to substitute other attachments such as a dial indicator. The vernier plate is adjustable to maintain the zero point in the event of wear.

If you write maker identify as IEN - 12419

TAPE . . Self-adhesive, transparent plastic, ¼ to 1 in. widths in rolls

Source: MINNESOTA MINING & MFG. CO.
902 Fauquier St., St. Paul 6, Minn.

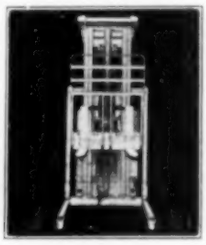
Small sample upon request

No. 850 is a new tape in the company's Scotch brand line. It is intended for splicing, protecting, tube sealing, reinforcing, edging, covering, masking, bundling. It rates 15 lb. in tensile strength per ½ in. in width. It provides 20 oz. of adhesion and 120 per cent elongation. Thickness is 2 mils. The tape is resistant to attack by acids, alkalis, acetones, ketones, hydrocarbons, esters. It is particularly suited to protect fluid line markings from fluids with high solvent action. Standard roll length is 2,592 inches.

If you write maker identify as IEN - 12420

TRUCK . . Power lift fork design adjusts for 32 to 48 in. pallets

Source: RAYMOND CORP.
3599 Madison St., Greene, N. Y.



The forks in this new design of the company's straddle type electric tiering truck are hinged to the main frame for adjustment by means of a screw to take pallets ranging from 32 to 48 in. in width. The assembly is available for trucks with load capacity from 1 to 1½ ton. Construction employs welded steel sections.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12421

A complete steam plant backed by undivided responsibility • Shipped completely assembled • More than 80% thermal efficiency guaranteed • 4-pass design provides 5 sq. ft. of heating surface per b.h.p. • Built-in induced draft eliminates need of expensive chimney • Simple installation • Clean, quiet operation • Heavy-duty construction assures long-lived dependability

Superior Steam Generators are manufactured in 18 sizes from 20 to 600 b.h.p. for pressures up to 250 p.s.i. or for hot water heating.

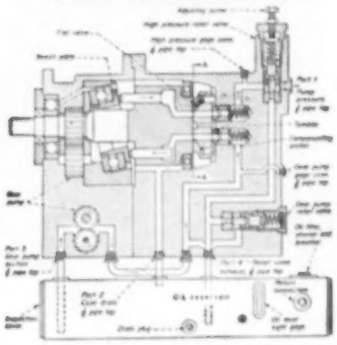
For complete details, write for Catalog 417

SUPERIOR COMBUSTION INDUSTRIES, Inc.
Factory: Emmaus, Pa.
Exec. Offices: Times Bldg., Times Sq., New York N.Y.
SUPERIOR STEAM GENERATORS

If you write maker identify as IEN - 12422

HEAVY DUTY HYDRAULIC POWER PUMPS

Pressures to 3000 & 5000 psi



The Oilgear Company announces three new "Fluid Power" heavy-duty constant delivery axial piston pumps. Similar components have been tested and proven in more than 100,000 installations without a single failure on record. Features of these fluid power generators are: patented balanced small flat valves with controlled oil film between working surfaces; patented small-one piece rolling pistons; patented quiet reverse flow relief valves; 100% supercharge that minimizes oil compression, prevents air entry and assures quieter operation. These units in pressures up to 3000 and 5000 psi are especially suited to heavy duty pushing, pulling, lifting, lowering and maintaining high static loads on large clamping rams; for use in the iron, steel, metal working, plastic, automotive, rubber, printing, lumber and textile industries. For illustrated descriptive and application data, write for Bulletin 46601. THE OILGEAR COMPANY, Dept. A, 1567 West Pierce Street, Milwaukee 4, Wisconsin.

If you write maker identify as IEN - 12423

A Cleveland Tramrail System with motor-driven roll grab picks up, delivers and sets in place rolls from 16-inch to 60-inch diameter, in lengths to 72 inches and weights up to 5,000 pounds. All motions of the crane and grab are controlled by operator without need of leaving cab.

GET THIS BOOK! BOOK No. 2008 Packed with valuable information . . .

CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
4201 East 285th St., Wickliffe, Ohio

CLEVELAND TRAMRAIL

If you write maker identify as IEN - 12424

ELECTRIC BRAKE & CLUTCH CALCULATOR

• Here's a real tool for design engineers. This new Warner calculator conserves valuable time otherwise spent paging through catalogs and reference books. It provides all specifications necessary to select *electric brakes and clutches* in "jig time" . . . including sizes and dimensions . . . starting and stopping time . . . formulas and curves for torque and heat calculations, etc. Send for your free copy today. For help on starting and stopping problems, phone your nearby Warner Electric Brake and Clutch Engineer.

WARNER ELECTRIC BRAKE & CLUTCH CO.
BELOIT, WISCONSIN, U.S.A.

If you write maker identify as IEN - 12425

STURTEVANT DUSTLESS BLENDERS

Thoroughly Blend Substances into an Inseparable Mass

The 4-Way Mixing Action of the Sturtevant Dustless Blenders thoroughly mixes two or more substances into an inseparable whole . . . every part of which is the same analysis. Single receiving and discharging opening insures tight sealing during mixing process. "Open-door" accessibility permits thorough cleaning. The fast, accurate mixing operation increases output . . . cuts mixing costs. Mixing capacities from ¼ ton to 75 tons per hour. Write

STURTEVANT MILL COMPANY
113 CLAYTON STREET • BOSTON 22, MASS.

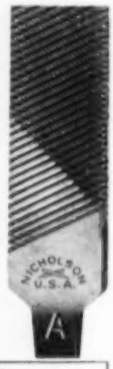
If you write maker identify as IEN - 12426

BOEING SPEEDS PRODUCTION

with "The right file for the job"

The vast military program has made "Faster production" a cry in every contributing industry . . . with thousands of tools and machines claiming the ability to respond. In few manual operations can speed and efficiency be more noticeably increased than in filing. And where Nicholson Special Purpose Files are used the results are usually outstanding. In them "Special Purpose" means special design for *special factors* in working on specific jobs and materials.

You'll do well in letting a technically minded Nicholson distributor or field engineer help your superintendents in assigning the right files to their difficult, unusual and mass-production jobs.



(RIGHT) Nicholson Special Aluminum Type "A" File . . . for fast metal removal yet leaving a good finish. Special tooth construction minimizes chipping and chatter.

NICHOLSON FILE COMPANY
33 Acorn St., Providence 1, R. I.
In Canada: Peck Ross, Inc.

NICHOLSON
A file for every purpose
SOLD THROUGH INDUSTRIAL DISTRIBUTORS

If you write maker identify as IEN - 12427

Send NOW!

Invitation to Design Engineers

Get complete, concise engineering data showing how easily SYNCHRON timing motors and time machines may be applied to timing mechanisms now in production or still in the idea stage. Many practical advantages! Send coupon.

Pulls up to 8 oz. direct load at 1 R.P.M. Operates efficiently at 40° to 140°F. Available with gear trains to convert any speed.

SYNCHRON timing motors

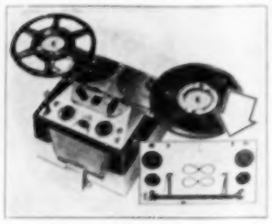
HANSEN MANUFACTURING CO., INC., PRINCETON 2, INDIANA
Send catalog and engineering data to:

Name
Firm
Address
City Zone State

If you write maker identify as IEN - 12428

COMMUNICATING . . Sound recorder and transcriber for dictation on tape

Source: PENTRON CORP.
219-23 E. Cullerton St., Chicago 16, Ill.



Adapter kit $30

Recording and play back time can be increased to a total of 4 hr. by application of a new 10½-in. reel adapter on the company's tape recording equipment. The attachment converts the recorder for use with a 2,400 ft. standard broadcast reel. It operates with the standard large NAB hub or the small commercial type hub so it is not necessary to remove the adapter for operation with either 5 or 7-in. reels.

A universal joint under each reel sprocket permits horizontal and vertical positioning for tape alignment.

If you write maker identify as IEN - 12429

STRIPPING . . Alkaline salt removes tin, lead and tin-lead alloys

Source: ENTHONE CO.
440-44 Elm St., Dept. IEN, New Haven 2, Conn.

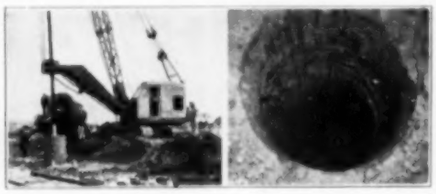
$1 to $1.50 per pound

Solder Stripper is a new alkaline salt to remove tin, lead and tin-lead alloys from brass, copper, gold, Monel Metal, nickel, silver, steel and stainless steel without attacking the base metal. Slight tarnishing will occur with copper alloys. The material attacks cadmium slowly, zinc at a rapid rate, in addition to dissolving tin and lead.

The white salt mixture is dissolved in water in a ratio of 1 to 3 lb. per gallon. It is held in solution in a plain steel or stainless steel tank in a temperature range between 180 and 200 deg. F. The company supplies instructions for application and protection. Packaging is in 5 to 100-lb. containers.

Identify as IEN - 12430

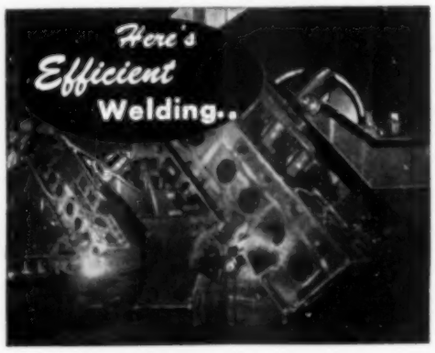
Foundation Borer is a new attachment developed by Gar Wood Industries of Wayne, Michigan, to apply on a mobile crane. The attachment bores and bells holes in the ground



for foundations for immediate pouring. It makes reinforcing unnecessary. As many as twenty-six footings can be completed in a day by the new equipment.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12431



When heavy, unwieldy weldments like these diesel crank cases can be quickly swung into any position so that every weld is made downhand — that's efficient welding.

Welders spend more time welding—do better welding at lower cost when they work with C-F Positioners because these hand and/or power operated machines reduce positioning time to a minimum. Investigate the cost saving advantages of C-F Positioners. They pay their way in any company.

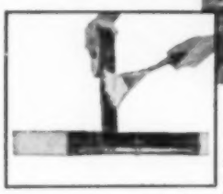
Write for Bulletin WP 26—an illustrated circular detailing the Specific Advantages of C-F Positioners.

CULLEN-FRIESTEDT CO.
1310 S. Kilbourn Chicago 23, Ill.

If you write maker identify as IEN - 12432

SOLVE CORROSION PROBLEMS with TAPECOAT*

The Original Coal Tar Tape Protection for Pipe, Pipe Joints, Couplings, Tanks, etc.



Here's time-tested, coal tar protection against moisture, acids, alkalis, chemical fumes and other severe conditions—both underground and above ground. TAPECOAT gives greater protection, reduces maintenance and cuts pipe replacement cost. It's easily applied because it's sized to the job. Comes in widths of 2", 3", 4", 6", 18" and 24". It's quickly applied by use of a torch to bleed the coating for perfect bond. Wrapped spirally or "cigarette-wrapped."

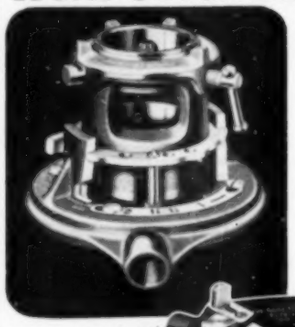
Write for details and prices.

*Reg. U. S. Pat. Off.

The TAPECOAT Company
1553 Lyons Street, Evanston, Illinois
Originators of Coal Tar Tape Protection

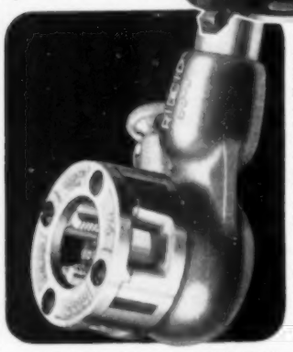
If you write maker identify as IEN - 12433

For *Extra* Fast Easy Smooth Pipe Threading Choose RIDGID Work-Saver Die Stocks



JAM-PROOF 65R
Perfect threads on 1" to 2" pipe with 1 set of 4 high-speed steel dies — sets to pipe size in 10 seconds. Lead screw on barrel won't jam on workholder—drive plate automatically kicks out driving pawl. Self-centering workholder sets instantly!

4P GEARED THREADER
For 2½" to 4" pipe. Balanced loop handles—easy to lift 4P where you want it. Mistake-proof workholder sets to size before put on pipe—1 set screw. Safe enclosed gear. Practically no upkeep. Special 4P for conduit.



OOR RATCHETS
For ⅛" to 2" pipe. Heads snap into ratchet ring from either side, won't fall out. Precision-cut alloy dies reverse for close-to-wall threads. 00R and 0R, ⅛" to 1"; 111R and 11R, ⅛" to 1¼"; 12R, ⅛" to 2". Conduit dies, too.

EXTRA VALUE
RIDGID's are famous for efficient design, smooth performance, rugged durability. Every die stock factory tested. For top value for your money, buy RIDGID threaders from your Supply House.

THE RIDGE TOOL COMPANY • ELYRIA, OHIO

RIDGID
Work-Saver Pipe Tools

If you write maker identify as IEN - 12435

REALOCK FENCE

means what it says

Realock Fence provides real locked-in protection for your grounds and property. All fittings have bolts placed so that nuts are removable only from the inside ...thereby insuring safety from intruders.

Realock Fence is heavily galvanized by a special process ... gives weather-resistant, durable service year after year with little or no expense for maintenance. Expert erection service is conveniently available.

For additional information write our nearest sales office or consult your classified telephone directory.

EAST: Wickwire Spencer Steel Division, Buffalo, New York
WEST: The Colorado Fuel & Iron Corporation, Denver, Colorado
PACIFIC COAST: The California Wire Cloth Corporation, Oakland, California

REALOCK FENCE
THE COLORADO FUEL AND IRON CORPORATION
CF&I
BRANCHES IN ALL KEY CITIES

If you write maker identify as IEN - 12436

Custom Protection

prevents shipping damage
as no other packaging method known!

Does your present packaging material provide just the *right amount* of protection for your product? Is your packaging operation fast, easy—*economical?* As this illustration shows, the Coleman Company found a *common sense* answer in Kimberly-Clark Interior Packaging—KIMPAK.* A modern packaging material of unlimited versatility that could be "tailored" to fit their specific needs.

KIMPAK is soft, grit-free, easy to apply as wrapping paper. It will absorb up to 16 times its own weight in moisture within 30 seconds—protect against shock, scratching, press-marking, vibration. KIMPAK is feather-light, yet gives more protection than most materials of far greater weight and density. Many concerns have found this an important factor in reducing the weight of their packages to offset recent postal rate increases.

Regardless of the product you manufacture, KIMPAK—in rolls, sheets or pads—will give you maximum protection at lowest true cost. Today—investigate *custom protection* with KIMPAK. For complete information, write to Dept. P-11, Kimberly-Clark Corporation, Neenah, Wisconsin.

KIMPAK INTERIOR PACKAGING

A Product of
Kimberly-Clark

*T. M. Reg. U. S. Pat. Off. Foreign Countries

If you write maker identify as IEN - 12438

WELDING . . Spot weld head employs a stored energy power unit

Source: RAYTHEON MFG. CO.
138 River St., Dept. 6470-IEN, Waltham 54, Mass.

Power unit controls it

The company announces addition of a third welding head, Model H, to its line of stored energy spot weld equipment, previously described IEN-9222-51. The new head provides a 12½-in. throat and measures 9 in. between the upper and lower electrodes in retracted position. Maximum electrode travel is 2 inches. Tapered electrodes can be used in a variety of shapes and sizes. The lower electrode assembly can be adjusted to position vertically, or off-set, or to form a 30-deg. forward angle to meet the requirements for most any shape of work.

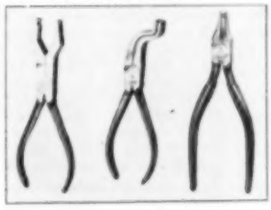
The head applies with any one of the three stored energy power units, Models 60, 225 and 1100. The first two operate on 115-volt 60-cycle input with current consumption respectively at 7 and 8 amp. and stored energy output at 63 and 225 watt seconds. Maximum peak current is 3,000 and 11,000 amperes. Discharge time is 0.003 to 0.0195 seconds. The largest Model 1100 operates on 220 or 440-volt 60-cycle single-phase ac. with input at 30 amperes. Its stored energy capacity is 1,080 watt seconds with discharge time at 0.008 to 0.032 seconds. Operating speed ranges from 40 to 300 spots per minute in welding ferrous, non-ferrous or dissimilar metals.

Electrostatic energy is stored in the power unit over a period of about one second by means of a rectifier tube. Amount of energy stored is dependent upon the charge of voltage which can be varied. Capacitor discharge into the primary of the welding transformer is by a tube as in an electronic switch. The discharge creates a welding current of high magnitude on low voltage at the welding tips which is suited particularly for precision welding as in instruments, electronic equipment, electrical appliances.

If you write maker identify as IEN - 12439

PLIERS . . Special designs, to order for specified applications

Source: UTICA DROP FORGE & TOOL CO.
2413-17 Whitesboro St., Utica 4, N. Y.



To your order

The company announces addition of new facilities for technical analysis of special plier requirements and production of designs worked out by the company's engineers. Three typical examples, shown in the illustration, include a unit, to the left, to handle a special fitting, one to reach around an obstruction and one, at the right, to join two strips of light metal without the need for rivets, staples or fasteners. Cost is but little more than that for standard pliers of corresponding sizes for 200 or more.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12440

SAMSON HAND SHEARS

Bench Type

- All Steel Construction
- Unbreakable Frame
- Easy Operation

IMMEDIATE SHIPMENT

Catalog of Metal Working Equipment furnished on request.

SIZE	No. 3R3	No. 3R4	No. 3R5	No. 3R6	No. 4R10
Cuts sheet or plate up to	14 ga.	1/8"	3/16"	1/4"	5/16"
PRICE	$17.30	$25.00	$31.70	$67.00	$104.25

f.o.b. New York, prices subject to change

JULIUS BLUM & CO., Inc.
Established 1910
540A West 22nd St., New York 11 • WAtkins 9-7042

If you write maker identify as IEN - 12441

EAGLE timing

WILL SPEED UP PRODUCTION FOR YOU

Because of Eagle Signal's great variety of precision timing devices, they are in a position to suggest the exact timer required for your individual industrial problem. Let Eagle help speed up production and save countless man hours for you. Write for Bulletin 340.

EAGLE SIGNAL Industrial Timers
EAGLE SIGNAL CORPORATION MOLINE, ILL.

If you write maker identify as IEN - 12442

SO SIMPLE...

KESTER FLUX-CORE SOLDER

So Simple . . . to end your soldering troubles with Kester's flux control (different core sizes) plus the wide selection of Flux-Core Solders in many wire sizes ranging from .009" to ¼-inch.

Kester also provides Field Engineering Service.

Free Technical Manual. Send for your copy of "SOLDER and Soldering Technique" today.

KESTER SOLDER COMPANY
4211 Wrightwood Ave., Chicago 39
Newark 5, New Jersey • Brantford, Canada

KESTER SOLDER

If you write maker identify as IEN - 12443

Saves you more time than any other tool in your kit

A Journeyman's tool, built to stand up under constant, on-the-job Contractor or Industrial use.

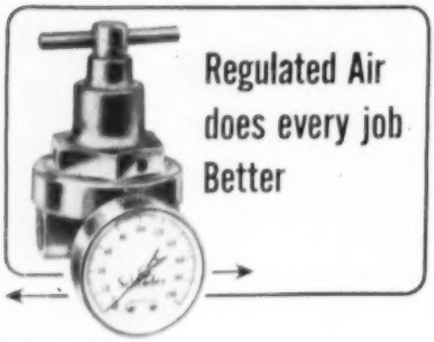
Built-in Blower—Anti-friction replaceable bearings—No starting hole needed—Blades to cut all materials—Fits any heavy duty ¼" or ⅜" drill.

Super Saws and Blades are listed on Federal Supply Schedules, Class 40 Material.

Write for Bulletin H-11 and prices

R.C.S. TOOL SALES CORPORATION
JOLIET, ILLINOIS, U.S.A.

If you write maker identify as IEN - 12444



Regulated Air does every job Better

Main line air pressure is usually more than you need for air equipment operation. Reduce pressure to meet your needs, but keep it constant with a **Schrader Air Pressure Regulator**. You'll find uniform air pressure reduces waste of high-pressure air, and leads to uniform equipment operation . . . longer compressor life.

In the Schrader catalog is a full description of Schrader Air Pressure Regulators, and all Schrader air line equipment. Send for your copy today.

A. SCHRADER'S SON

Division of Scovill Manufacturing Company, Incorporated
458 Vanderbilt Ave., Dept. D-46, Brooklyn 17, N. Y.

If you write maker identify as IEN - 12445

positive safety!

INSTANT SWITCHING ACTION with

wheelco flame-otrol

MODEL 1300

FOR ALL TYPES OF OIL FIRED BURNERS

To protect your oil fired equipment from combustion failure the Wheelco Flame-otrol has been engineered with instantaneous safety shut-off action. Response to any unsafe condition is immediate and sure. Safe start is guaranteed . . . whether following a cold start, temperature or limit control action, flame or power failure. Resumption of fuel flow is allowed only when ignition is assured. An automatic proving period checks electronic and sensing circuits for any defect that might cause hazardous operation. Approved by the Associated Factory Mutual Laboratories and Underwriter's Laboratories.

WRITE FOR FLAME-OTROL BULLETIN F-3

instrumentality

wheelco instruments division
BARBER-COLMAN COMPANY
1204 FORD ST. • ROCKFORD, ILLINOIS, U.S.A.

If you write maker identify as IEN - 12446

WHICH OF 1001 USES FOR THIS METAL HOSE IS YOURS?

Are you overlooking an opportunity to improve the performance, life, or salability of your equipment with metal hose?

Yours may be one of the hundreds of undiscovered uses for metal hose—especially for flexible, pressure-tight TITEFLEX® Metal Hose.

The special construction of Titeflex, and the variety of alloys, sizes, and fitted lengths enable you to combat severe temperature, pressure, and corrosion conditions where a flexible connection is necessary.

For maximum results, ask us for design suggestions and help in hose selection.

Titeflex Let Our Family of Products Help Yours

MAIL COUPON TODAY

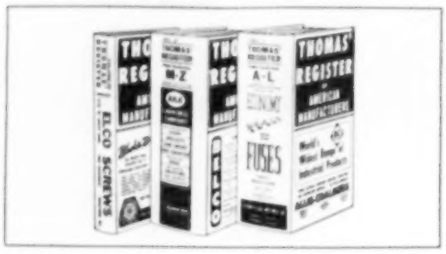
TITEFLEX, INC.
506 Frelinghuysen Ave., Newark 5, N. J.

Please send me information about Titeflex Metal Hose and its applications.

NAME _____
TITLE _____
COMPANY _____
ADDRESS _____
CITY _____ ZONE ____ STATE _____

For Your Special Information

ALL MAKERS ARE LISTED — IEN S-35



Many attempts have been made to go "editorially selective" in setting up headings for subjects in product directories. Every one has fallen short of accomplishing its purpose because no editor, or anyone else for that matter, is able to say what each product should be called or what principal purpose each one serves. The average directory user does not know this and simply assumes that any directory is incomplete when he picks his own designation and then cannot find it.

That is why Thomas' Register is preferred by so many plant and purchasing men. It is set up to list all products made in the United States by all of the names under which each is known. The sole editorial aim is to be complete and inclusive.

The 1953 edition is now being made ready for the press. It will be available shortly after the first of the year. We advise your reservation now if you want to make certain to receive a copy for your "where to buy it" information in the months ahead. Subscription is $15 plus handling charges.

FOR YOU TO LOOK THROUGH — IEN S-36

Industrial Equipment News has come up through the years as a logical companion publication with Thomas' Register. It set out in 1933 to secure and publish information concerning the new products developed for industrial use among all that are listed in the Register. It has published descriptions of some 45,000 new products and is adding more each month.

These new products are assembled for you to look through with your own problems in mind. The approximate 800 advertised subjects are there also for your reference. We suggest that you turn the pages making notes of what you find. Then go back and note in more detail those you checked until you have a list of the ones on which you desire complete information. Use the subject index to make certain you have seen everything of interest to you.

You can send us the list of identifying numbers and we will forward your inquiries to each manufacturer you have indicated or you can write to them direct using the addresses we have supplied. We hope you will thus solve all of your current problems. If you do not, however, tell us about the remaining ones so we will have the opportunity to make suggestions. The service is at your command without obligation. We will either answer your special inquiries with knowledge of previous experience in the subject or we will publish your request for help in the "I wish I had" column to ask all our readers.

Top Management:

YOUR BOOST IS NEEDED MOST

If you write maker identify as IEN - 12447

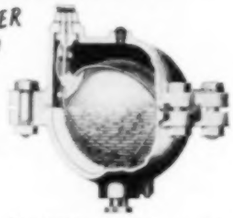
FRUSTROSITY® CASE No. 74: Mr. Stuckinlab is really bogged down. If he had a 1952 Brookfield Viscometer at hand, he would know all the viscosity answers—*he could make determinations directly in centipoises in a matter of seconds in lab, plant, or both.* Whether the materials you work with are Newtonian or non-Newtonian, you owe it to your wife, customers and co-workers to get up-to-date information on Brookfield Viscometers *adaptable to any problem from less than one to 32,000,000 centipoises.* Ask your Lab Supply House or drop a line to Dept. G, Brookfield Engineering Laboratories, Inc., Stoughton, Mass.

*FRUSTROSITY is that frustrated condition a man gets into when his problem is Viscosity Determination or Control and he hasn't asked BROOKFIELD.

If you write maker identify as IEN - 12448

GET RID OF AIR ACCUMULATIONS IN PIPE LINES...

A BIG TROUBLE SAVER THAT COSTS YOU LITTLE!



When air lodges at high spots in pipe lines, it reduces the effective area of the pipe, creates a friction head, lowers pumping capacity, and may result in serious water hammer!

Simplex Air Release Valves bring you a sure, efficient cure for these difficulties . . . venting air *automatically* before it can cause damage.

IT'S SIMPLEX IT'S ACCURATE

The Simplex Air Valve is easily installed . . . positive in action . . . ample in capacity. Standard valves for pressures up to 250 p.s.i. . . . special valves for pressures up to 800 p.s.i. Thousands have been in successful use for over 50 years.

Write for free bulletin to Simplex Valve & Meter Co., Dept. 7, 6717 Upland Street, Philadelphia 42, Pa.

SIMPLEX
VALVE AND METER COMPANY

If you write maker identify as IEN - 12449

When you think of

STAINLESS STEEL FASTENINGS

think first of

ANTI-CORROSIVE

Anti-Corrosive has millions of stainless steel fastenings *in stock* for immediate delivery . . . plus exceptional production capacity that can fill your requirements beyond stock items faster, *better!*

FREE — Write for Slide-Chart 52T which instantly identifies A-N nos. pertaining to stainless fastenings.

25 YEARS OF LEADERSHIP IN FASTENERS OF STAINLESS STEEL

Anti-Corrosive Metal Products Co. Inc.
Manufacturers of STAINLESS STEEL FASTENINGS
CASTLETON ON HUDSON, NEW YORK

If you write maker identify as IEN - 12450

Using leather, fibre, plastic, metal components?
. . . Then consider MOLDED RUBBER
Natural . . . Synthetic . . . Silicone

MOLDED RUBBER Has 1001 Uses . . .
TOP LEFT Contact lens remover
TOP RIGHT Impeller
BOTTOM LEFT Cup
BOTTOM RIGHT Boot
OUR SPECIALTY Bonding Rubber to Metal

MOLDED RUBBER cuts production costs 4 ways!

- Rubber costs less
- Rubber is more uniform
- Rubber is easier assembled
- Rubber outlasts other materials

SILICONE RUBBER: For extreme high or low temperature resistance and high flex-fatigue.

WRITE TODAY for samples of molded rubber items. Enclose your blueprints for prompt quotations. Components are unlimited as to size and shape, color excepted.

ADVANCE RUBBER CO., Incorporated
1702 Washington Ave. No., Minneapolis, Minn. • Phone ALdrich 4717

If you write maker identify as IEN - 12451

MINNESOTA

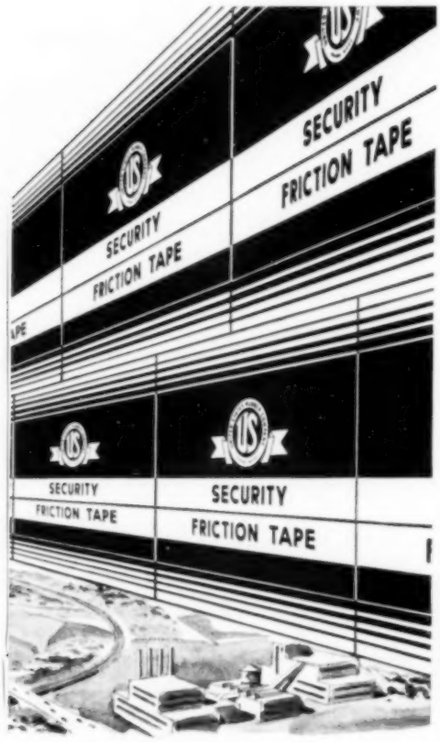
the O-ring with the FORMULA for strength, accuracy and uniformity

INJECTION MOLDED Minnesota O-rings meet specific requirements for hydraulic seals with close tolerances and without flash or trim. They function in air, gas or hydraulic systems including cylinders, hydraulic valves, water pumps, hoisting mechanisms, hydraulic brakes, bottling machines and engines. *Write for the O-Ring Bulletin.*

Also manufacturers of U and V seals . . . grommets . . . washers . . . and small parts made of rubber and synthetics including silicone, thiokol and saran.

MINNESOTA RUBBER & GASKET COMPANY
3630 WOODDALE AVENUE • MINNEAPOLIS 16, MINN.

If you write maker identify as IEN - 12452



For long-lasting protection

U.S. Security Friction Tape is a wall of safety—for both electrical and all-purpose jobs. A powerful grip . . . high-tensile and dielectric strength . . . no pinholes to cause dangerous leaks . . . straight-tearing, non-ravelling.

U. S. Security Rubber Tape is unbeatable for perfect splicing when used with U.S. Security Friction Tape.

Quality Products of

U.S. RUBBER
SERVING THROUGH SCIENCE

UNITED STATES RUBBER COMPANY
Tape Department, Rockefeller Center, New York 20, N. Y.

If you write maker identify as IEN - 12454

FURNITURE . . Bench and cabinet made of steel, 60 by 28 inch top

Source: KALASTEEL PRODUCTS CO.
340 Parsons St., Kalamazoo, Mich.

$28.50 $64.50

No. 2860 is a new steel bench and No. 2860-S is a companion cabinet, based upon the bench construction, in the company's line of steel furniture. Both mount the top at 34 in. above the floor and are built in welded assembly. The bench has structural legs with end and side braces. The cabinet is enclosed on the end and back and is fitted with Duron board sliding doors at the front. Finish is gray or green baked enamel. Weights are 135 and 160 pounds.

If you write maker identify as IEN - 12455

FOUNDRIES . . Binding material for use with foundry molding sand

Source: MINCO PRODUCTS CORP.
11 Minco Sq., Saginaw, Mich.

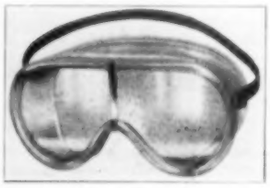
Adds to sand in muller

Northern Bond trade names a new molding sand bond on which the company has applied for patent. It is used in sands to make molds for steel, gray iron, malleable iron and nonferrous metals. It will bond synthetic and natural sand equally well. Characteristics include high green, dry and hot strengths with good flowability and high collapsibility. It is suited particularly for use in molds from which castings are to be produced to close tolerances.

If you write maker identify as IEN - 12456

PROTECTING . . Plastic goggle stops chips, metal spatter, splash

Source: WATCHEMOKET OPTICAL CO.
230-34 W. Exchange St., Dept. N21, Providence 3, R. I.



For general use

Replaceable lens on this new Model-440 Eye-Saver goggle measures 6 in. in width. It is mounted in a plastic frame that will fit over prescription glasses. The lens is designed for impact resistance and optical clarity. The front edge of the frame extends beyond the face of the lens to protect its surface from scratching when the goggle is put down on a table. The frame can be specified plain or ventilated.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12457

PREVENT THREADED CONNECTION LEAKS WITH WECO Hi-Speed SEAL

• You'll never have leaking pipe thread connections when you make them up with WECO HI-SPEED SEAL. Quickly and easily applied, HI-SPEED SEAL forms a leak-proof coating on the threads that positively prevents leaking.

HI-SPEED SEAL is a non-hardening compound that requires no thinner . . . is not affected by hot or cold weather and seals with less torque. Make all of your piping connections leak-proof by making them up with WECO HI-SPEED SEAL.

Ask your WECO or CHIKSAN Representative or write for latest bulletins.

WECO

WELL EQUIPMENT MFG. CORP.
HOUSTON 1, TEXAS
Exclusive Sales Representative Outside Mid-Continent Area
CHIKSAN COMPANY
New York Chicago 5, Ill. Newark 2, N.J.
Export Sales: CHIKSAN EXPORT COMPANY New York Newark 2, N.J.
Manufacturers and Distributors of Oilfield, Refining, Marine and Industrial Equipment

If you write maker identify as IEN - 12458

This is the IMPACT WRENCH THEY'RE ALL TALKING ABOUT!

IT'S A *Thor*

¼" and ½" bolt capacities. Complete kits available for nut setting, drilling, tapping, etc.

Cuts motor and chassis work up to 30%! Saves muscle, time! Loosens tightest nuts in a jiffy, seat them firmly . . . fast! Mechanics like sturdy Thor construction. You'll like it, too!

buy Good tools *Thor*

PORTABLE POWER TOOLS

INDEPENDENT PNEUMATIC TOOL CO.
AURORA, ILLINOIS

ELECTRIC DRILLS | IMPACT WRENCHES | VALVE TOOLS | SANDERS, POLISHERS

If you write maker identify as IEN - 12459

TORCH-O- Says:

"I'm trigger controlled for faster, easier soldering—brazing—melting"

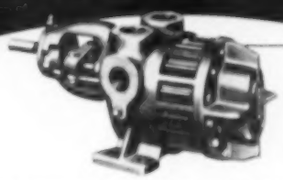
Torch-o-matic saves time—saves gas! Just pull the trigger and air-acetylene gas automatically ignites—release trigger and gas shuts off instantly. No hazard from open flame when not in use. One-hand operation with no "time-out" to light up and adjust. Pays for itself many times over in savings and convenience. Three sizes of tubes and nozzles take care of any job. Fits your present equipment. Write for complete details.

DEALERS WANTED: *Some territories still open—act now!*

VELOCITY POWER TOOL COMPANY
7505 Thomas Boulevard • Pittsburgh 8, Pa.

If you write maker identify as IEN - 12460

Why WRECK A PUMP?



We do it frequently, but with a plan. As part of our continuous development and research program, we run pumps to destruction. Sometimes we are testing performance on unusual conditions of applications, or sometimes testing new design features. When you buy a Roper Rotary Pump, you get the benefit of this work in longer life and improved performance.

Roper Rotary Pumps are made in a wide range of sizes from 8 to 300 G.P.M. and for pressures up to 1,000 P.S.I., with speeds varying according to the type of liquid being handled. Many different mounting arrangements make Roper Pumps fit easily into new layouts, as well as existing setups requiring replacement. Every Roper Pump is thoroughly tested and inspected before shipment. Another Roper guarantee of dependable performance.

Write for Catalog Today

GEO. D. ROPER CORP.
211 Blackhawk Park Ave.
Rockford, Illinois

ROPER *Rotary Pumps*

If you write maker identify as IEN - 12461

plant proved....
ALEMITE HAND GUNS
Save grease! Save time! Cut production costs!

Alemite Lever Gun — Model 1056-SE. For pressure gun lubricants. Develops up to 10,000 lbs. pressure. Positive delivery assured by heavy priming spring behind neoprene follower. 1 lb. capacity. Loader fitting.

Alemite Lever Gun — Model 6243-J. High pressure piston (up to 10,000 lbs. easily). Combination spring and vacuum priming. 21 oz. capacity. Loader fitting.

Just Out! New Alemite Industrial Equipment Catalogue. Send now for your FREE copy. Write Alemite, Dept. E-112, 1850 Diversey Pkwy., Chicago, Ill.

SW **ALEMITE**

If you write maker identify as IEN - 12462

INSULATION

THERM-O-FLAKE
HIGH TEMPERATURE VERMICULITE INSULATION

Chem-Brix
CHEMICALLY BONDED REFRACTORIES

REFRACTORIES

GOOSE LAKE
FIRE CLAY BRICK AND CLAYS

Illinois Clay Products Company

STEEL MEN! FOUNDRYMEN!
Send for Booklet today!

JOLIET, ILLINOIS

If you write maker identify as IEN - 12463

How to Reduce
DOWNTIME
DOWNTIME
DOWNTIME
DOWNTIME

with STEAM TRAPS

★ Super-Silvertops* reduce downtime since three pipe connections in the head permit these traps to be installed straight-in-line or as an elbow . . . saving 50 minutes whenever a trap is installed . . . 50 minutes whenever serviced.

★ Super-Silvertop valves and seats are made of longer lasting Anderlov* alloy which eliminates continual replacement. The patented guided bucket minimizes bucket damage.

Write for a copy of Anderson's famous 36-page book "Solving Steam Trap Problems"

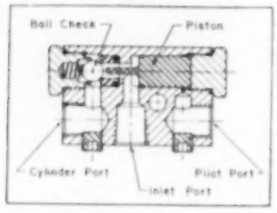
THE V. D. ANDERSON COMPANY
1933 West 96th Street • Cleveland 2, Ohio
*Trade Marks Reg. U. S. Pat. Off.

SUPER-SILVERTOPS

If you write maker identify as IEN - 12464

VALVE . . Pilot check design locks pressure in hydraulic circuits

Source: FLUID CONTROLS INC.
P. O. Box 186-A, Willoughby, Ohio



Holds clamping pressure

Flow from the inlet port to a cylinder port is without restriction through this new pilot check valve. Reverse flow is blocked by a steel ball riding a hardened steel seat until control pressure is applied at the pilot port. This pressure acts upon a piston about four times the area of the ball check port to unseat the ball and permit reverse flow when low pressure or no pressure exists at the inlet port.

The piston is heat treated steel annealed at its contact end to prevent damage to the ball. Piston travel is limited by a shoulder in the body and its movement is dampened by the restricted pilot port. Two sizes, based on pipe connections, are ¼ and ⅜ inch. In both cases the housing measures about 3½ by 1 by 2 inches. Pressure rating is to 3,000 pounds. Flow is 6 gpm. at 50 pounds.

If you write maker identify as IEN - 12465

HEATING . . Gas burner produces uniform fan shaped flame

Source: RESEARCH VACUUM SUPPLY CO.
3436 W. Montrose Ave., Chicago 18, Ill.

List is $2.85 to $4.95

Local heating, sealing, soldering are representative operations for which this new Fishtail gas burner has been designed. It is made of brass and is fluted to maintain a uniform flame. The gas issues from a straight line of 4 to 14 holes as shown by the 9-hole in the illustration. Flame length ranges from 2 to 2½ in. in length. Gas handling capacity is 1,500 to 5,625 btu. per hour.

Burner length is from about 1 to 1 1/16 inches. Width is ⅝ to about 1 inch. The male connection thread is ¼ in. on one of the units. It is ¼ in. on the other four. Similar burners, of heat resisting metal, can be specified for oxygen and gas.

Identify as IEN - 12466

The application list continues to grow for R-V-Lite and Vimlite plastic window materials, according to Arvey Corporation, following its purchase of the Vimlite Division from Celanese Corporation about a year ago. Stock room walls, windows and entire outer wall sections in old as well as new buildings, machine guards, skylights, windows in swinging or freight elevator doors, general emergency repairs are all suited for the plastic-coated galvanized wire material.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12467

Control **MAXIMUM PRODUCTION**
with G. S. HAND TACHOMETERS and SPEED INDICATORS

1% Accuracy for any range from 30 to 100,000 RPM or surface speed.
Antimagnetic durable mechanism.
Efficient repair service at moderate charges.

IDEAL FOR
MOTORS — SHAFTS
SPINDLES — LOOMS
TURBINES — FOR TEXTILE AND POWER PLANTS

WRITE FOR ILLUSTRATED FOLDER

GEORGE SCHERR CO., Inc.
COMPLETE LINE OF PRECISION INSTRUMENTS
198-C LAFAYETTE ST. NEW YORK 12, N. Y.

If you write maker identify as IEN - 12468

YOU BE THE JUDGE!
...a simpler, better Hose Clamp

Got a job for a hose clamp? Before you fill it, send for a sample of the Corbin Self-Tightening Hose Clamp. Discover how much easier and quicker it is to install. How it forms a positive seal even on irregular castings. Why it never needs adjustment. Why shellac isn't necessary.

Leading manufacturers are using them by the thousands on automobiles . . . home appliances . . . aircraft . . . pumps . . . machinery . . . air conditioners . . . because they've proved best by test . . . and most economical. Write Corbin Hose Clamp Division, The American Hardware Corporation, New Britain, Conn.

CORBIN **Self-Tightening HOSE CLAMPS**

If you write maker identify as IEN - 12469

ARCCO... *NOW* OFFERS 8 DAY CHARTS and ROCKWELL CHART DRIVES

EIGHT-DAY ARCCO CHARTS are now available for use on practically all Rockwell-Emco, Foxboro and Westcott orifice meters. Eight day charts for other instruments soon available.

With this NEW Chart Drive 11 rotation speeds are possible. Turrets are available for 2, 3, 4, 6, 8 and 12 hours, also for 2, 3, 7, and 8 day rotation. Standard hub gives 24 hour rotation.

ROCKWELL CHART DRIVES are ruggedly built and are sealed for years of trouble-free service. The drives are adaptable to practically every type of instrument using circular charts. The price is $11.55 each. Turrets are $3.85 each F.O.B. Los Angeles Calif. or Tulsa, Oklahoma.

AMERICAN RECORDING CHART CO.
3113 E. 11th St. • Los Angeles 23, Calif.

SEND FOR DRIVE AND CHART BULLETIN

If you write maker identify as IEN - 12470

EVANS' SPRINGS

COMPRESSION • TORSION
EXTENSION & SPECIAL TYPE SPRINGS
METAL STAMPINGS & WIRE FORMS

SEND FOR SPECIFICATION SHEET FOR EASY ORDERING

JOHN EVANS' SONS, INC.
506 NORTH 13th STREET
PHILADELPHIA 23, PA.

If you write maker identify as IEN - 12471

For FILTERING & FILLING
small plant or batch lots of
PHARMACEUTICALS, COSMETICS, CHEMICALS, SOAPS, Etc.

Two Ertel units that make small production efficient. They have all the desirable features of Ertel high production equipment: EFS-B FILTER has single hand wheel for simple trouble-free operation, bronze or stainless circulatory system, accomodates accepted Ertel Asbestos Filter Sheets. PORTABLE FILLER has automatic overflow system, non-drip spouts, bottle size flexibility up to gallons. And, both units can be easily moved from place to place. Write for detailed information on this important equipment...it belongs in your plant.

ERTEL ENGINEERING CORPORATION
KINGSTON 4, NEW YORK
Branch Office & Showroom Located in New York City
COMPLETE LINE OF Liquid Handling Equipment

If you write maker identify as IEN - 12472

TEFLON* PACKINGS
for Hydraulic & Pneumatic Cylinders, Presses, Pumps, Valves

CHEMISEAL BACK-UP RINGS
Protect Packing — Lengthen Its Life

For protecting O-rings and other packing from extrusion, deterioration and loss of efficiency—select Chemiseal Back-up Rings, made of Teflon—a natural for hydraulic service.

These rings are chemically inert, can't be affected by oils or solvents. They won't harden, soften, swell or shrink in service. Tough, resilient, they support the packing with which they are used, greatly lengthen its life. Try them, and you will standardize on them.

CHEMISEAL V-TYPE PACKING

The ideal valve packing that seals with low gland pressures and operating torque, made from solid Teflon or Teflon compounds. Extremely resilient, tough and anti-hesive—it cannot seize the valve stem or shaft—is long wearing, impervious to all hydraulic fluids, outlasts other packings several times over. Supplied in sets with square-end Teflon adaptors. Send for catalog No. 810 V.

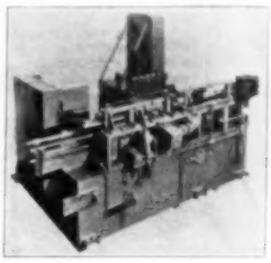
*du Pont's trademark for its tetrafluoroethylene resin

UNITED STATES GASKET COMPANY
FLUOROCARBON PRODUCTS DIVISION
FABRICATORS OF "TEFLON", "KEL-F" AND OTHER FLUOROCARBON PLASTICS
CAMDEN 1, NEW JERSEY

If you write maker identify as IEN - 12474

PRESS . . Automatic hydraulic assembles bushings in engine head

Source: COLONIAL BROACH CO.
P. O. Box 37-A, Harper Station, Detroit 13, Mich.



Applies in conveyor line

A head casting for a gasoline engine is picked up at a loading station at the left of this new machine and is pulled into a preparation station by a transfer bar. At this point diamond tipped locating pins are inserted into previously drilled and reamed location holes at each end of the casting while valve guide holes are brushed free of dirt and chips and are lubricated. At the same time part numbers are stamped on the head.

The machine then moves the head to the centrally located assembling station where pins again engage the part to position it correctly while hydraulic rams pick up six valve guide bushings from a gravity feed hopper and press them into position. The head is then pushed out between guide rails to an unloading station.

The machine has capacity to handle 70 head castings per hour. It measures about 8 by 6 by 8 ft. and is driven by a 15-hp. motor connecting to a 22-gpm. and an 11 gpm. pump. Control centers at a panel at the front of the machine. Limit switches on each ram stop the action if any part is too large.

If you write maker identify as IEN - 12475

OIL CONDITIONER . . Takes sludge, water, dirt, acids from lubricating oil

Source: HILLIARD CORP.
35 W. 4th St., Elmira, N. Y.

Ask for Bulletin R-275

Four new oil conditioners have been added to the company's line of similar equipment, previously described IEN-6420-51. They have been designed particularly for operation with turbines to take oil from the turbine supply continuously, to condition and return it. The smallest unit rates 9 to 12 gph. The largest will handle 72 to 100 gph. Dimensions are about 25 by 27 by 50 in. to 62 by 30 by 54 inches. The four sizes cover a range of turbines calling for 300 to 2,400 gal. of oil in the turbine supply.

Operation starts at a pump which draws oil from the turbine to deliver it through a heat exchanger to a pre-heater from where it passes through a bed of filtering material. The oil flows from the filter operation into an evaporating chamber where water and moisture are removed. Then it moves to the heat exchanger where the warm oil transfers heat to the cold incoming oil. From this point a second pump takes the reconditioned oil back to the reservoir or to a clean oil tank.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12476

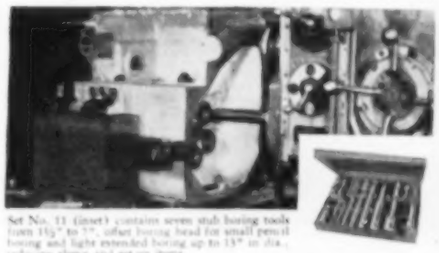
BUY PRODUCTION TIME WITH ROBERTSON COOL-CUT WHEELS

More and more manufacturers are finding that Robertson Cool-Cut Grinding Wheels save production time, increase output, lower wheel costs. That's because these *open structure* wheels assure maximum chip clearance, cut cooler and faster, require fewer dressings, and last longer than conventional wheels.

For practically any grinding operation, there's a Robertson Cool-Cut to meet your requirements. Write for your free copy of "How to Buy Production Time."

ROBERTSON MANUFACTURING COMPANY
TRENTON 5, NEW JERSEY
Resin Bonded and Vitrified Bonded Grinding Wheels • Mounted Wheels • Segments

If you write maker identify as IEN - 12477



Set No. 11 (inset) contains seven stub boring tools from 1½" to 7", offset boring head for small pencil boring and light extended boring up to 13" in dia., reducing sleeve and set up items.

Use DAVIS "Super" Micrometer stub boring tool sets

✓ Adjust to within .0001".
✓ Rugged for heavy boring.
✓ Precise for fine finishes.
✓ 10 complete, convenient standard sets equipped with high-speed steel cutters to choose from.
✓ Stellite, tungsten or super high speed cutters also available.

THE handiest production boosting tool sets on the market. For use with horizontal boring, drilling and milling machines . . . vertical or horizontal boring machines . . . turret lathes . . . vertical turret lathes . . . or milling machines. Available for almost immediate delivery. Modifications in any set can be made to meet exact requirements. Write for complete details.

WHATEVER YOUR BORING PROBLEM, IF DAVIS CAN'T BORE IT — IT CAN'T BE DONE!

DAVIS BORING TOOL DIVISION
GIDDINGS AND LEWIS MACHINE TOOL COMPANY
FOND DU LAC, WISCONSIN

If you write maker identify as IEN - 12478

PROBLEM: *To get reliable automatic temperature control at low cost*

SOLUTION: *GENERAL PLATE'S fabricated TRUFLEX® thermostat metal assemblies meet every temperature requirement*

Recently a manufacturer was faced with a problem of obtaining a thermostat metal assembly. To fabricate the assembly himself meant expenditures for dies and specialized equipment . . . a costly proposition.

The problem was presented to General Plate who provided the necessary TRUFLEX assembly ready for installation. Result — necessary performance was obtained . . . costs were minimized.

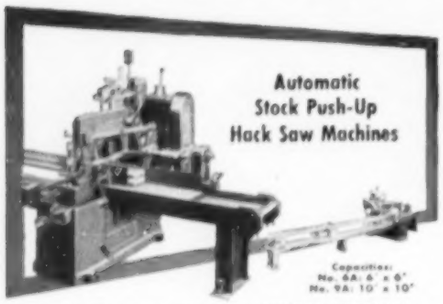
You, too, can save money because General Plate fabricates, in accordance with your exact specifications, complete units which are supplied to you ready for installation. It means you eliminate costly fabrication problems and needless equipment costs . . . experimental and assembly adjustments are erased from your books.

You get reliable performance because every order comes to you an exact duplicate of the original . . . consistently uniform in tolerances, temperature reaction and performance, thus preventing rejects and costly adjustments in assembly.

GENERAL PLATE
Division of Metals & Controls Corporation • 711 Forest St., Attleboro, Mass.

If you write maker identify as IEN - 12479

If you write make identify as IEN - 12480



Feed, Measure, Cut-Off—AUTOMATICALLY

These automatic stock push-up hack saw machines are not new. MARVEL built the first practical bar feed hack saw machines, over 30 years ago. The sound, proven, basic principle of these machines has never changed—but they have been constantly improved and refined. Today they are still the leaders—the most practical, fastest, most accurate, most productive cutting hack saw machines built. No matter what your cut-off work, let us recommend the MARVEL saw that will give you true economy, speed and accuracy at an attractive price.

Write for Catalog

MARVEL Metal Cutting SAWS

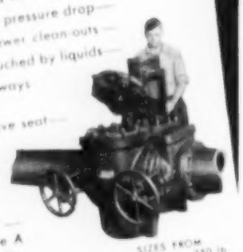
ARMSTRONG-BLUM MFG. CO.
"The Hack Saw People"
5700 Bloomingdale Ave. Chicago 39, U. S. A.

If you write make identify as IEN - 12481

Everything you want in a non-stop strainer . . .

ELLIOTT TWIN STRAINERS Type "A"

- One cylinder works while other is cleaned
- Streamlined to cut pressure drop
- Big baskets for fewer clean-outs
- Valve screw untouched by liquids
- Valve position always apparent
- Self-cleaning valve seat
- Wear plates available if required



Get all the story—write for the Type A Twin Strainer Bulletin.

SIZES FROM 1" UP—125 to 250 lb PRESSURES

ELLIOTT COMPANY
Accessories Dept., JEANNETTE, PA.
DISTRICT OFFICES IN PRINCIPAL CITIES

If you write make identify as IEN - 12482

Powermaster®
PACKAGED AUTOMATIC BOILERS with VORIFLOW® Combustion

Save Fuel and Man Hours!

For light oil, heavy oil, gas and gas-oil firing. Steam generating units from 15 to 500 HP—15 to 250 p.s.i. Hot water boiler units 30 p.s.i. Reduce operating costs as much as 40%—save man-hours—get clean, dependable heat and hot water. A.S.M.E. Code construction.

Write For Bulletin

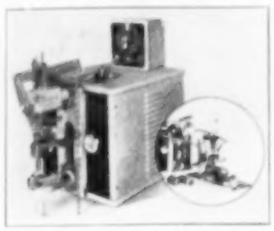
ORR & SEMBOWER, INC.
860 Morgantown Rd., Reading, Pa.

BUILDERS OF DEPENDABLE BOILERS SINCE 1885

If you write make identify as IEN - 12483

SOLDERING . . Resistance machine for small mechanisms, instruments

Source: JOYAL PRODUCTS INC.
56-8 Belmont Ave., Newark 3, N. J.



Eleven heat control steps

New size, Model 5000-WV, has been added to the company's line of resistance soldering and welding machines, previously described IEN-7629-51. The new machine operates on 230-volt ac. and rates 25 amperes. It is equipped with water cooled electrodes and measures 10 by 11 by 10 inches.

The control housing on top of the main housing is 4 in. in height. It can be set to regulate a soldering interval independent of the operation of the spring action electrodes which hold the work in place during soldering and cooling. The machine is particularly suited to solder additional elements to an assembly and for completing the coil connections to commutators on fractional hp. motors.

If you write make identify as IEN - 12484

MILLING . . Adjustable end mill, carbide blades for cast iron or steel

Source: GODDARD & GODDARD CO.
12284 Burt Road, Detroit 23, Mich.

Ask for Bulletin 120

Serrated wedges are employed in the company's Crosslock construction in this new line of Serratip small diameter end mills. They hold the carbide blades in place for adjustment and for quick replacement. The unit is available in right hand straight shank design in nine sizes 1 to 2½ in. diameter.

Size and number of blades for each diameter are calculated to provide best cutter proportions and performance for average shop application in machining cast iron and steel. Length of cut is 1 to 1½ inches. Shank diameter is 1 to 1¼ inches.

Identify as IEN - 12485

Test engineers for GE needed a quickly removable enclosure to surround an air conditioner while it was being tested in operation under simulated field conditions. They chose a 10-ft. section of Spiratube wire reinforced fabric air duct made by Flexible Tubing Corporation. They secured one end of the tube to the test room ceiling so the tube hangs down to the floor and forms the enclosure they wanted. They attached the bottom flange to overhead pulleys so they can pull it up and collapse the tube, accordion fashion, upward to the ceiling. This puts the test unit in the clear for removal and replacement.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write make identify as IEN - 12486

"Solved our marking problem!" say users everywhere

"The *MULTISTAMP* Hand Stamp Stencil Duplicator is the best thing we've seen for shipping tag and label addressing . . . for marking boxes, cartons, packages." Quick, clean, accurate, easy to use. Prints 1000 or more clear, sharp copies from one stencil . . . one inking. Just type, write, trace or draw on low cost stencil, snap in position and print . . . like using a rubber stamp. Non-mechanical, of non-corrosive metal. No moving parts, has replaceable ink pads. 8 complete outfits $9.50 to $99.50.

IT PRINTS ON
POSTCARDS SHIPPING TAGS
BOXES CARTONS
LABELS PACKAGES
At Your Office or Shipping Room Supply Dealer

MULTISTAMP STENCIL DUPLICATOR
MANUFACTURED ONLY BY THE MULTISTAMP CO. — NORFOLK, VIRGINIA

If you write make identify as IEN - 12487

MARKED in Aluminum Ink*
—ideal for dark metallic surfaces

Marking steel drums, tools, parts, pipes, etc. is smooth sailing with the Flo-master Felt-Tip Marker. It marks on any surface—glass, wood, plastic, etc.

*The complete range of ten colors in Flo-master Inks permits speedy and accurate identification for assembling, stocking, inspecting.

Flo-Master semi-opaque inks—waterproof, non-smudging, fast-drying—are recommended for hard-to-mark surfaces using the KING SIZE Flo-master (illustrated). For general purpose marking—cartons, cases, etc.—use Transparent Inks with POCKET SIZE Flo-master.

Contact your supplier or write direct to—
Cushman & Denison Manufacturing Co.,
153 West 23rd Street, New York 11.

Flo-master
FELT-TIP MARKER

If you write make identify as IEN - 12488

You can provide easy mobility to a variety of industrial products with

IRONBOUND ALL-PURPOSE HANDLING UNITS . . .

POPULAR IRONBOUND FLO TRUK

- An easy to handle ruggedly constructed unit for carrying bulky and heavy loads at lowest cost. Seven standard sizes with one or two push handles makes it easy to select the proper truck for your requirements. Ask an Ironbound engineer for suggestions.

The HANDY for furniture and similar items.
The HAULER for cases, crates, tote boxes, etc.
The HUSKY for general use throughout the plant.

THE IRONBOUND "SAFETY-SKID" WITH ROUND CORNERS

Ironbound construction assures long hard use with complete safety to product and operator. Still the time proven method for handling of materials efficiently and economically.

IRONBOUND
BOX & LUMBER COMPANY
Materials Handling Division
50 HOFFMAN PLACE • HILLSIDE, N. J.

MANUFACTURERS OF QUALITY BUILT SKIDS, SEMI-LIVE SKIDS, FLOOR TRUCKS, ROLL TRUCKS, DOLLIES AND PRY BARS

If you write make identify as IEN - 12489

Indus Wheels Solve Wheel Problems

Send for SPECIFICATIONS AND PRICE SHEETS FOR INDUSTRIAL AND JUVENILE WHEELS

- Firestone Semi-Pneumatic, Pneumatic, or Solid Tires
- Tire Load ratings to 300 pounds
- Wheel Sizes 6" to 14"
- Available with ball bearings or oil retention type bearings
- Baked enamel finish to customers' specifications

INDUS CORPORATION
431-E NORTH HOLMES
INDIANAPOLIS 22, INDIANA

If you write maker identify as IEN - 12490

ROBERTSHAW Model B-10

for temperature control / for warning signals

A single-pole, slow make-and-break thermostat with high sensitivity, yet rugged construction, that has wide application for heating needs up to a maximum temperature range of 550°F.

MODEL B-10 DIRECT ACTING TYPE. *Breaks* circuit on rise of temperature. Particularly suitable for sterilizers, steam tables, warming tables, ovens, coffee urns, deep-fat fryers, baby incubators, poultry brooders, etc.

MODEL B-20 REVERSE ACTING TYPE. *Makes* circuit on rise of temperature. Particularly suitable for warning lights or signals on over-temperature for application to fire signals, signal overheating, motor generators, etc.

Write for full information.

In Home and Industry EVERYTHING'S UNDER CONTROL

Robertshaw THERMOSTAT DIVISION

Robertshaw-Fulton Controls Company • Youngwood, Pennsylvania

If you write maker identify as IEN - 12491

Pangborn

Hydro-Finish is versatile! Use it to speed up cleaning, polishing and finishing of molds and dies as well as production line work.

Hydro-Finish saves you time, labor and money. Scale and discoloration are removed in *minutes* instead of hours. Cleaned surfaces are virtually free of directional grinding lines. Costly hand work is greatly reduced. No danger of excessive metal removal because tolerances are held to .0001". Fine mesh abrasives suspended in water do a precision job.

Find out how Pangborn Hydro-Finish improves product quality, increases tool and die life! For full details, write today for Bulletin 1400A to: PANGBORN CORPORATION, 2300 Pangborn Blvd., Hagerstown, Md.

Look to Pangborn for the latest developments in Blast Cleaning and Dust Control equipment.

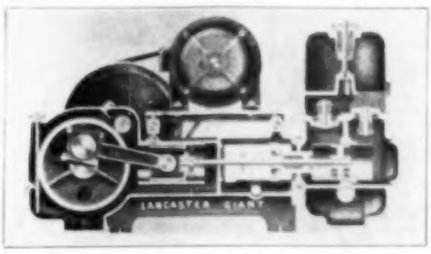
Pangborn

BLAST CLEANS CHEAPER
with the right equipment for every job

If you write maker identify as IEN - 12493

PUMP . . Reciprocating design, for motor or engine drive, 4.5 to 45 gpm.

Source: LANCASTER PUMP & MFG. CO.
852 Manheim Pike, Dept. IEN, Lancaster, Pa.



Illustrated and described in Catalog SW-1952

Six sizes are included in the company's new Giant design of double acting reciprocating pumps. The smallest has 1 in. suction and ¾ in. discharge. The largest measures 2½ in. at both points. Pressure capacity is to 80 pounds. The pump is designed for shallow well service in industrial water supply, for boiler feed and condensate return. It can be supplied with a variety of plungers and valves to meet individual requirements and to handle given liquids.

Spring controlled rubber valves, shown in the section illustration, are in accessible location where they can be renewed without disturbing the pipe connections. The plunger rod is made of stainless steel and the plunger itself is supplied for specified service. Lubricant is circulated to the working parts and bearings. The motor mounts on a bracket to provide adjustment. A manually started gasoline engine can be mounted in place of the motor.

If you write maker identify as IEN - 12494

VALVE . . Pressure regulator for use in air, steam, water lines

Source: JORDAN REGULATOR CORP.
107-111 W. Mulberry St., Lebanon, Ohio

Gate wipes the plate

Sizes range from ¼ to 2 in. in this new valve for working pressure to 150 lb. at maximum steam temperature of 400 deg. F. The valve also applies for pressure to 250 lb. in water or air lines. Its spring backed diaphragm can be set to hold outlet pressure as low as 2 pounds. The valve provides for excellent regulation on dead end service. It shuts off tight, is self cleaning and unaffected by sediment in the flow stream.

The bronze body mounts a stainless steel plate over which slides a stainless steel gate secured to the diaphragm stem. Orifices in the plate and gate provide for straight through flow. The diaphragm is made of bronze and is backed up by a compression spring that can be adjusted and locked in desired position. Installation can be made with the valve in any position. Flow is from left to right as the unit is shown in the section illustration.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 56

If you write maker identify as IEN - 12495

MILITARY PACKAGING of generating equipment is speeded by DOUGHBOY Power Hand Sealers at the Minneapolis plant of D. W. Onan & Co.

NEW PORTABLE HEAT SEALER ELIMINATES "SKIPPING"

Mounting bracket converts sealer into a bench-type unit.

Here's an inexpensive, lightweight heat sealer that gives you all the advantages of heavy installations. It's the new DOUGHBOY Power Hand Sealer, a motor-driven rotary sealer that guarantees a continuous dwell for the entire length of the seal. Adequate speed (200 inches per minute) enables operator to seal every inch uniformly, with none of the lapses encountered with manually controlled devices.

Three models handle all types of heat-seal materials. Further details sent on request to

DOUGHBOY INDUSTRIES, INC.
Mechanical Division • New Richmond, Wisconsin

If you write maker identify as IEN - 12496

BOOSTED PRODUCTION 233%

Problem: How to soft solder five joints on gas tanks.

Old Way: Air-gas torch soldering.

New Way: 20-kw Allis-Chalmers induction heater with five station fixture.

Results: Production increased from 15 to 50 tanks per man-hour. New handling methods will increase production even more.

WHETHER YOUR JOB is soldering, brazing, hardening, or annealing, it will pay you to investigate Allis-Chalmers Induction Heaters and find out about the spectacular savings you can make. In fact, there may be complete data on a job similar to yours already processed in A-C's electronic laboratory. Simply call your nearby Allis-Chalmers district office and outline your heating problems, or write Allis-Chalmers, Milwaukee 1, Wis.

ALLIS-CHALMERS A-3647

If you write maker identify as IEN - 12497

ELIMINATE WIRES

through use of

DU PONT CONDUCTIVE COATINGS

Easily and rapidly applied by spray, brush, dip, stencil to metals and non-conductors, they give a conductive surface of low resistance. One troy ounce covers about 3 sq. ft. Use them in printed circuits for radios, amplifiers, switchboards, meters; for capacitors and couplings; for static shielding to replace foils and cans; for resistors and solder seals. Save hours of time, $$$$ of cost! For more information, send for Bulletin CP-2-1247. E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Dept., Wilmington 98, Delaware.

DU PONT ELECTROCHEMICALS

DU PONT

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

If you write maker identify as IEN - 12498

How To

Mark Name Plates In 1/5 the Time

Cutting costs in these times is a good trick if you can do it. You can, on plates requiring detail marking, by using an Automark Electric Metal-Marking Typewriter. The operator lightly touches the key and the Automark does the rest, quickly and automatically. No dial to turn—no lever to pull. Marking output is increased five times and worker fatigue is greatly reduced. Write today for Bulletin 8-16.

AUTOMARK
Electric Metal-Marking
TYPEWRITER
Manufactured Exclusively By

AGENTS
Desirable territories open for responsible representatives. Write giving complete information, lines carried and territory covered.

DEFIANCE MACHINE & TOOL COMPANY
1926 South Vandeventer Ave. • St. Louis 10, Mo.

If you write maker identify as IEN - 12499

CAL-WIC WIRE CLOTH

In all Meshes, Weaves and Weights

Filtering, screening or grading — whatever your special job demands may be — Cal-Wic Wire Cloth is available in the right mesh, weave or weight to meet your requirements. Resistance to corrosion, abrasion and temperature extremes assured through the use of appropriate metals and alloys.

The long-wearing qualities of Cal-Wic Wire Cloth take on added importance during times like the present.

For additional information write or phone our nearest sales office.

EAST: Wickwire Spencer Steel Division, Clinton, Mass.
WEST: The Colorado Fuel & Iron Corporation, Denver, Colorado
PACIFIC COAST: The California Wire Cloth Corporation, Oakland, Calif.

CAL-WIC CFI
INDUSTRIAL SCREENS
THE COLORADO FUEL AND IRON CORPORATION

If you write maker identify as IEN - 12500

with the

RAYMOND

Hydraulic PALLET LIFT TRUCK

One man handles 3-ton loads with ease using this RAYMOND Hydraulic Pallet Lift Truck! Why — because hydraulic power, not the operator, does the lifting. A few pumps of the handle and even heaviest loads are ready for hauling.

MODEL L4P

RAYMOND Pallet Trucks help out on short hauls and during peak periods—release your power trucks for long hauls and tiering.

These rugged trucks are highly maneuverable, feature fingertip lowering, come in 4,000 or 6,000 lb. capacities. Available also in Lightweight 2,000-lb. capacity model.

MODEL EL4P

FAST MOVER!

That's this RAYMOND Low-Lift Rider-Type Electric Truck. It travels up to 6 mph empty and 3 mph loaded — speeds up long hauls, stock picking, loading, unloading. Capacity: 4,000 lbs.

SEND TODAY

The RAYMOND CORPORATION
Formerly LYON-Raymond Corporation
3578 Madison St., Greene, N.Y.

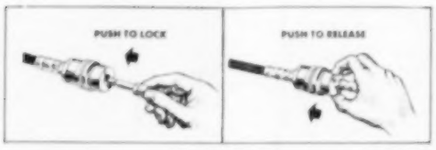
Gentlemen: Please send me Bulletin 207, describing your complete line of Hydraulic Lift Trucks. Also Bulletin 750, showing your new Low-Lift Electric Truck.

NAME _____ TITLE _____
COMPANY _____
STREET _____
CITY _____ STATE _____

If you write maker identify as IEN - 12502

HOSE FITTING . . Quick coupler carries 1/4 in. pipe connections

Source: **NELSON SPECIALTY CORP.**
442 Peralta St., San Leandro, Calif.



About $2 per assembly

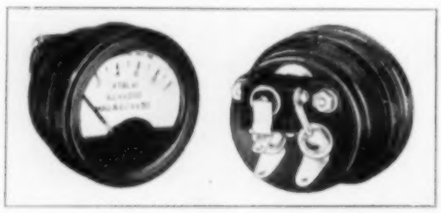
The male adapter in this new Quick-Coupler is pushed into place through a spring loaded tapered collar on the coupler body. A groove near the end of the adapter engages a set of hardened steel balls held in place by the spring backed collar. The ball action locks the two parts together in leak-proof assembly until pressure is applied against the collar to move it axially. This releases the locking balls and the male adapter is disengaged.

The coupling provides swivel action. It also closes an internal valve mechanism to cut off the air when it is uncoupled. A sealing washer that prevents leakage can be changed quickly without tools.

If you write maker identify as IEN - 12503

METER . . For electrical readings, sealed design, illuminated dial

Source: **INTERNATIONAL INSTRUMENTS INC.**
P. O. Box 2954-A, New Haven 15, Conn.



Particularly for instrument panels

Miniature lamp mounted at the rear of this new Model-150 meter directs light through a sealed window at the rear of the housing to illuminate the translucent plastic dial. Graduations and the pointer stand out in sharp relief on the white background. The meter employs a miniaturized D'Arsonval movement with an internal zero adjustment. Housing diameter is 1½ inch. A similar design, with a square face, is known as Model 153. The face measures 1¾ in. in this unit.

Identify as IEN - 12504

Fenwal Thermoswitch, a thermostatic unit, is employed with a solenoid actuated back-pressure valve in an ammonia suction line serving a refrigerating heat exchanger. The switch causes the back-pressure valve to open and close. Thus it controls suction in the line so the exchanger cannot produce temperatures below a predetermined point in the space served.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12505

better paint job with Red Devil Paint Conditioner

Paint pepped up by Red Devil Paint Conditioners goes on more smoothly, and better protects your product. Patented 3-directional motion (22 shakes per second) puts pigment in perfect suspension—quick!

Various models provide automatically-timed agitation for ¼ pint to 5 gal. cans. Attachments for round and square containers.

NOT JUST PAINT

Manufacturers of everything from printers' ink to putty use these machines to mix, blend, and rejuvenate all kinds of high-viscosity and low-viscosity mixtures.

If you have hard-to-mix, or *hard-to-keep-mixed blends*, Red Devil can arrange to have test samples agitated at a nearby location.

Red Devil Catalog No. 71M lists all Red Devil three-way agitators and Red Devil floor maintenance machines. Write Red Devil Tools, 129 Coit Street, Irvington, New Jersey.

Products of **Red Devil Tools.** 129 COIT ST. IRVINGTON 11, N. J. U. S. A.

If you write maker identify as IEN - 12506

Easy-low cost

RESOLITE SKYLIGHTING, and *NO MAINTENANCE!*

For skylighting new or old corrugated sheet buildings, just lap in sheets of translucent, corrugated RESOLITE — no framing, no flashing, no caulking!

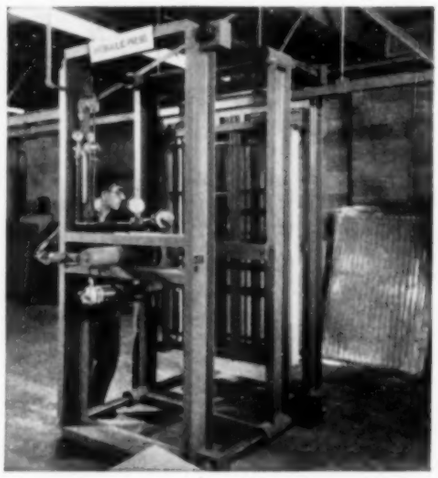
And you can eliminate daytime lighting costs through Resolite's excellent interior diffusion of daylight.

Rugged Resolite is a Fiberglas-reinforced resin plastic; it's shatterproof, weatherproof and inert to ordinary acid or alkali industrial fumes.

Investigate Resolte for skylighting your industrial buildings — TODAY! For complete information and name of your nearest distributor, write:

RESOLITE CORP., Rt. 19, Zelienople, Pa.

If you write maker identify as IEN - 12507



DAKE Custom Engineering saved $35,000 for this manufacturer on a special 34 x 60-bed press

In manufacturing bath enclosures it was necessary to put half-inch deep corrugations in large (34" x 60") sheets of plexiglass. The forming had to be done quickly after the sheets had been softened in an oven.

Most suppliers approached about a press with a 34" x 60" bed quoted in terms of a $40,000 to $50,000 investment. Then the manufacturer happily learned about Dake.

After placing his problem before Dake engineers, the result was the custom-engineered hydraulic press shown above . . . designed, fabricated and installed for less than 10% of what other manufacturers had quoted.

If your production operations might be simplified with a custom-engineered press, it will pay *you* to consult Dake, too.

DAKE PRESSES

DAKE ENGINE COMPANY
614 Seventh St.
Grand Haven, Mich.

Arbor Presses · Hand-Operated Hydraulic · Power-Operated Hydraulic · Guided Platen · Gap Type Presses · Movable Frame

If you write maker identify as IEN - 12509

HERE'S HOW IT WORKS:

YOU DON'T HAVE TO
KICK THE BUCKET
TO CLEAR IT—IF IT'S AN
M-T-MATIC

Irresistible leverage sweeps out SAND—COAL—GRAVEL, or any granular materials, on every trip—*even if frozen or close-packed*. The secret is the separately mounted stripper-plate—which must push up and out when it starts over pulley radius. THOUSANDS NOW IN USE—handling *more* material at same or faster belt speeds. Saves belts—cuts maintenance—easy to install on any elevator conveyor—all sizes.

POSITIVE —AUTOMATIC

Standard buckets also available . .

★ Send for prices today (give present bucket size)

QUICK DELIVERY!

PEKAY MACHINE & ENGINEERING CO.
100 N. LA SALLE STREET CHICAGO 2, ILLINOIS

If you write maker identify as IEN - 12510

a stand-out
IN PLANT COOLERS

Here is one of the newest coolers in the Halsey Taylor line—designed for long life and faultless service, with its gleaming stainless steel top and distinctive Halsey Taylor health-safe advantages. It's a stand-out in coolers but just one of the many made by Halsey Taylor for office, or plant use! Write for literature.

HALSEY TAYLOR
Coolers

THE HALSEY W. TAYLOR CO. WARREN, OHIO

If you write maker identify as IEN - 12511

Speed Up Production
Secure Greater Uniformity
Save Time, Labor, Fuel

with more than 2,000 manufacturers now using

ROSS INDUSTRIAL AIR SYSTEMS

DRYING . . . . . BAKING
CURING . . . . . COOLING
HEAT TREATING . . . AGING
CONDITIONING

ROSS PAINT FINISHING Systems insure complete coordination of all component parts—conveying, cleaning, rust proofing, dry-off, cooling, painting, baking, hardening. Long experience and outstanding facilities for designing, engineering, manufacturing and installing insure maximum production and operating efficiency with ROSS built equipment. Catalog on request.

J. O. ROSS ENGINEERING CORPORATION
MANUFACTURERS OF AIR PROCESSING SYSTEMS
444 MADISON AVENUE NEW YORK 22, N. Y.

Chicago • Detroit • Boston • Los Angeles • Seattle • Montreal

If you write maker identify as IEN - 12512

PUMP . . Motor mounted centrifugal for water circulation and drainage

Source: LANCASTER PUMP & MFG. CO.
852 Manheim Pike, Dept. L, Lancaster, Pa.

The Laundro-Pak

Capacity is about 38 gpm. at 5-ft. head for this new Model 375 centrifugal pump and its ¼-hp. 110-volt ac. motor. The motor is equipped with an 8-ft. extension cord and plug and is protected against overload. The assembly measures 12 in. in overall length, stands about 7 in. in height by 6⅝ in. in pump housing diameter. The open type bronze impeller is non-clogging design.

Suction and discharge connections are threaded for 1-in. pipe. The pump is particularly suited to empty laundry trays installed below sewer lines and to carry water away from automatic washing machines. It can be employed in water circulation on industrial type radiant heating lines and to circulate water for air conditioning and refrigerating units.

If you write maker identify as IEN - 12513

INSULATING . . Sound deadener to undercoat sheet metal assemblies

Source: PHILIP CAREY MFG. CO.
Carey Walk, Dept. H, Cincinnati 15, Ohio

The material will not burn

Numbers 40 and 41 are new emulsions, supplied in fluid consistency, for spray or wipe on application to the underside of sheet metal assemblies such as office desks, tables, cabinets. The material dries to produce a permanent film on the metal that imparts a heavy solid feeling with sound hushing ability. The dry film can be painted over with emulsion type paint or quick setting lacquer or enamel. The material itself can be baked at temperatures to 325 deg. F.

If you write maker identify as IEN - 12514

PROTECTING . . Safety cap guards worker against falling objects

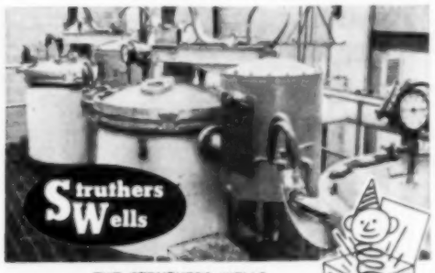
Source: SAFETY FIRST SUPPLY CO.
423-27 Magee St., Pittsburgh 19, Pa.

No. 70-902 BR

Fiberglas reinforced Hard Boiled plastic cap is made with a brim shaped to form a rain trough or wireway and with a grooved crown, also to hold a lamp wire in place. The new cap clears a worker's head and rests on a hammock and adjustable sweatband that can be slipped into place quickly and secured with wedge type fasteners. The band can be adjusted to fit head sizes from 6⅝ to 7⅝. The cap is accepted by the Coal Mining Section of the Commonwealth of Pennsylvania for the intended service.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 56

If you write maker identify as IEN - 12515



THE STRUTHERS WELLS
IMPREGNATOR
. . . with the Quick Opening Closure!

for Impregnating Electrical Coils, Aluminum or Magnesium Castings, Carbon Parts and Other Materials

The improved Struthers Wells impregnating system illustrated—one of many recent installations—is heated with circulating hot oil, with a separate hot air system for preheating the charge before impregnation. Covers are quickly removed or installed—with great savings in operating labor. Furnished as bare units, or complete with piping, instruments and accessories. Heated by steam, electricity or circulating heat transfer medium.

Write for Bulletin B 10 (on your letterhead, please)

STRUTHERS WELLS CORPORATION
WARREN, PA.
Plants at WARREN, PA. and TITUSVILLE, PA

If you write maker identify as IEN - 12516

M&M reduction machines

M & M Reduction Machines are rapidly gaining favor in industry for converting waste to uniform size for easy handling and in many cases into valuable by-products. Cut your disposal costs with an M & M Reduction Machine. Send us your problems.

MITTS & MERRILL
1014 South Water • SAGINAW, MICHIGAN

If you write maker identify as IEN - 12517

EMERGENCY HEAT
QUICK··· SAFE··· PORTABLE!

● You can avoid layoffs, speed work in cold areas, provide temporary heat for warehouses with Herman Nelson Portable Heaters. They also provide auxiliary heating for those extra cold days or during loading or unloading operations and for scores of other heating and drying jobs.

HERMAN NELSON STANDARD MODEL
Capacity 250,000-385,000 BTU/hr. Gasoline engine powered. Self-contained for areas lacking electricity. Other models available—electric powered—with capacities from 125,000 to 450,000 BTU/hr.

The only completely safe portable heater that uses flexible ducts to spot heat where most needed—and remember, only uncontaminated air heaters are absolutely safe!

Models as low as $560.00—total cost often saved during first season. For full information, write Dept 103, Herman Nelson Division, American Air Filter Company, Inc., Moline, Illinois.

If you write maker identify as IEN - 12518

New Dunham
GAS-FIRED UNIT HEATERS
for more even heat
...more years of service

Seven sizes from 70,000 to 230,000 BTU per hour input.

Here's what you get with new Dunham Gas-Fired Unit Heaters on the job.

Rapid Heat Transfer: Heat interchanger tubes are of 16 gage Aluminized Steel. Built-in draft diverter assures proper burner operation even under abnormal conditions.

Quiet Operation: Dunham design prevents warm-up noises. Air distribution system is quiet, efficient.

Longer Service Life: Aluminized Steel combustion chamber and heat exchanger welded into rugged, gas-tight, one-piece construction, resists corrosion, withstands temperatures to 1600° F.

For full information about either Dunham Gas-Fired Unit Heaters or Gas-Fired Duct Furnaces, WRITE FOR BULLETIN 1575-11.

DUNHAM

C. A. DUNHAM CO.
400 W. Madison St., Chicago 6, Ill.

HEATING SYSTEMS AND EQUIPMENT

If you write maker identify as IEN - 12519

If you write maker identify as IEN - 12520

TYPE D5

PRECISE, VERSATILE TEMPERATURE CONTROLS

TYPE D98

The two thermostats shown are precision-built controls which permit accurate temperature settings over wide working ranges. They are widely used on laboratory and industrial ovens, water baths, hot plates, incubators and similar applications where flexibility of use is required. The various models cover ranges of 175° or 300° C., between limits of -75° C and 350° C with on-off differentials as low as approximately .14 C.

The model D98 shown is similar to D5 above, but is enclosed in an explosion proof housing for use where volatile fumes or dust are present. Bulletin #3-1 gives full information on these controls. Send for your free copy today.

UNITED ELECTRIC CONTROLS COMPANY
80 School Street, Watertown, Mass.

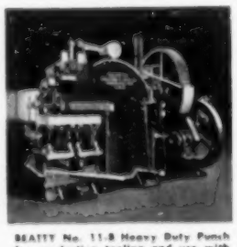
STANDARD & SPECIAL THERMOSTATS & PRESSURE SWITCHES

If you write maker identify as IEN - 12521

BEATTY *Machines*

SPEED YOUR PRODUCTION

There's a better-designed, better-built BEATTY machine for practically every metal-working application. If you have a production problem, let a Beatty engineer study it.



BEATTY No. 11-B Heavy Duty Punch for production tooling and use with BEATTY Spacing Table.

BEATTY CoPunShear — one compact unit handles Coping, Punching, Shearing.

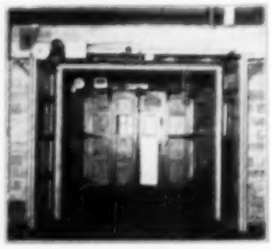
BEATTY Horizontal Hydraulic Bulldozer for heavy forming, flanging, bending.

BEATTY MACHINE & MFG. CO.
HAMMOND, INDIANA

If you write maker identify as IEN - 12522

DOORS . . Double design and controls for airlock in trucking passage way

Source: CLARK DOOR CO.
519 Hunterdon St., Newark 8, N. J.



Ready to install

New assembly of the company's power operated folding door, previously described IEN-7817-52, is now available with the required controls to form an air lock between the outside and a plant interior at a trucking passage way. One door opens while the other remains closed to permit entry for a truck into the lock area. The open door is then closed and the other is opened so the truck can proceed without admitting any draft of outside air or releasing inside air.

The company is prepared to supply the doors, frames with hardware in place, operating and control equipment.

If you write maker identify as IEN - 12523

CLEANING . . Rotary brush machine to scrub, wax and polish a floor

Source: AMERICAN FLOOR SURFACING MACHINE CO.
516-20 S. St. Clair St., Toledo 3, Ohio

Stops on lever release

Operation for the company's new line of 14, 16 and 19 in. DeLuxe floor maintenance machines centers at a new Swing Around handle. It can be rotated so the built-in trailing wire lies on either side of the operator. It includes a safety grip type of operating lever to start and stop the motor. A steel strain release minimizes cord and plug breakage. Releasing the handle stops the machine if control is momentarily lost.

Drive is by a ⅓, ½ or ¾ hp. motor in the three sizes. Motor speed is 1,750 rpm. for a brush speed of 172 rpm. on the smallest machine and 162 rpm. on the largest one. Available equipment, subject to specification, includes brushes and attachments for polishing, scrubbing, sanding, buffing, burnishing. One tampico brush and 50 ft. of extension cord and plug are standard equipment.

If you write maker identify as IEN - 12524

New division known as ChemoTec has been formed by Eutectic Welding Alloys to develop and service a line of Cibo adhesive materials to bond together similar or dissimilar materials including ferrous and non-ferrous metals, glass, wood, porcelain, plastic glass fabric. ChemoTec specialists will advise on given applications and name the correct adhesives in the new line.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12525

SEE interesting, informative exhibits and demonstrations of 317 different kinds of products, featuring latest methods for more efficient power production, distribution, and utilization, and plant services.

LEARN about hundreds of new cost-saving ideas from the displays of over 300 leading manufacturers — ideas on design, installation, maintenance, modernization, and expansion.

GET the benefit of talking to exhibitors' technical experts, on hand to explain how you can adapt improved equipment and methods to your current operations and assist with your plans for the future.

PLAN NOW TO ATTEND

20th NATIONAL POWER SHOW

National Exposition of Power & Mechanical Engineering
GRAND CENTRAL PALACE—New York
DEC. 1-6

ASME Auspices in conjunction with Annual Meeting
MANAGEMENT INTERNATIONAL EXPOSITION CO.

If you write maker identify as IEN - 12526

PUT THE MATEER ELECTRIC FILLER TO WORK . . . AND PROFIT

- m·e·f· delivers measured quantities of wet or dry materials to processes or containers—handles cold or hot materials including waxes, insulating compounds, asphalts, powders, granular materials and slurries.
- m·e·f· sets a new high in filling speed—up to 120 fills per minute.
- m·e·f· provides maximum accuracy—savings in material often offset initial cost within a year.
- m·e·f· provides extreme flexibility—of capacity, control, materials and packages handled.
- m·e·f· provides quick change-overs—only 5 minutes are required to clean, sterilize and change m·e·f· for wet or dry materials.
- m·e·f· is easy to keep clean and sanitary.

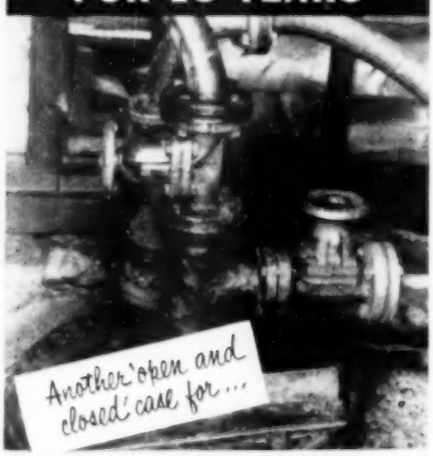
Write Dept. 105 for illustrated, descriptive catalog. G. Diehl Mateer & Co., Lincoln Highway, Devon, Pa.

m·e·f· MATEER ELECTRIC FILLERS

FAST • ACCURATE • FLEXIBLE • CLEAN

If you write maker identify as IEN - 12527

TROUBLE FREE FOR 15 YEARS



GRINNELL-SAUNDERS DIAPHRAGM VALVES

In 1936, a Canadian mine installed Saunders Diaphragm Valves with rubber linings on a muriatic acid storage tank. After 15 years, those same valves are in use — no maintenance being required except periodic replacement of diaphragms, accomplished without removing valves from the line.

Bodies of Grinnell-Saunders Diaphragm Valves come in iron, stainless steel, bronze, aluminum and other metals. Cast iron (a metal not in short supply) can be lined with glass, lead, natural rubber, neoprene and other materials, which often handle corrosive fluids *better* than metals.

Diaphragms are available in natural rubber, neoprene, butyl, hycar, a special synthetic for foods and Kel F (which is chemically inert to all acids and alkalies in all concentrations except molten alkali metals). Problems which Grinnell-Saunders Valves can solve are extremely varied. Write us for details.

GRINNELL
WHENEVER PIPING IS INVOLVED

Grinnell Company, Inc., Executive Offices, Providence, R. I.
Coast to Coast Network of Branch Warehouses and Distributors

If you write maker identify as IEN - 12529

Rough on Floors? you can't faze TUFF-TEX!

Tuff-Tex* will take all that the traffic will bear from scuffling feet...shunting trucks...vibrating machines. And it's *greaseproof!*

Installed quickly, economically. Simple to maintain. Dirt and grime won't penetrate through the surface.

Get in touch with your Tile-Tex* Contractor. Or, for new Tuff-Tex folder, write:

THE TILE-TEX DIVISION, *The Flintkote Company, 1234 McKinley Street, Chicago Heights, Illinois.*

The Flintkote Company of Canada, Ltd., 30th Street, Long Branch, Toronto, Canada.

TUFF-TEX... *Greaseproof Industrial Tile*

If you write maker identify as IEN - 12530

HAND HYDRAULIC PUMP

Single and Double Designs

To 20,000 P. S. I.

Interchangeable Pistons 1/8-1/2-3/4 inch

★

Integral Release Valve

★

Dual Pump Unit Reservoir 360 Cu. in.

Pressure range is 3000 to 20000 P.S.I. Pipe connections ¼" N.P.T. Handle length is 18 inches. Weight is 8 to 18 pounds. Unit can be bolted or welded into position.

WILLIAM S. PINE

1637 E. 22nd St., Los Angeles 11, Calif.

If you write maker identify as IEN - 12531

Automatic Safety IMMERSION HEATER

AUTOMATIC THERMOSTAT FOR CONSTANT TEMPERATURE CONTROL

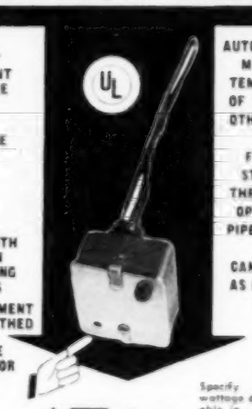
ADJUSTABLE TEMPERATURE RANGE—100° TO 212° F.

EASILY INSTALLED

BOXED COMPLETE WITH INSTALLATION AND OPERATING INSTRUCTIONS

HEATING ELEMENT COPPER SHEATHED

TEMPERATURE REGULATOR FOR AUTOMATIC THERMOSTAT



AUTOMATICALLY MAINTAINS TEMPERATURE OF WATER OR OTHER LIQUID

FITS ANY STANDARD THREAD 1¼" OPENING IN PIPE OR TANK

CAN BE USED AS PORTABLE UNIT

WHEN ORDERING: Specify voltage and wattage desired. Available in . . . 110 volt—600, 1000, or 1500 watt. 220 volt—750, 1000, 1250, 1500, or 2000 watt

FULL PRICE PREPAID Anywhere in U.S.A. **$7.95** COMPLETE

RECONVERSION EQUIPMENT CO.

EAST SPARTA 5, OHIO

Telephones: 2366, 2398 or 3011

If you write maker identify as IEN - 12532

ISOLATING . . Vibration insulator for application under plant equipment

Source: CHANNEL PACKING & RUBBER CO. 309-13 Cypress Way, Pittsburgh 28, Pa.

A little spring action helps

Chanelco Squeegee is a new strip, pad or washer construction made of multiple layers of fabric vulcanized with an oil resistant resilient composition under high pressure and temperature. The fabric is cut on the bias and laid up to resist lateral movement. Thickness ranges upward from ¼ inch.

The material applies under equipment, such as presses, to absorb shock loading, under track joints over which cranes are operated to prevent shaft and axle breakage, under motors to promote smooth operation, under the heads of hold down bolts to absorb spring-back that may result in loosening or in bolt crystallization.

If you write maker identify as IEN - 12533

ALUMINUM . . Bonded to hardboard in 4 by 8 ft. and 4 by 12 ft. panels

Source: MIRATILE MFG. CO. 8203 S. Wallace St., Chicago 20, Ill.

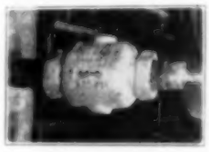
Miralum sample upon request

Flexible and rigid assemblies of aluminum sheet, bonded to ⅛-in. tempered hardboard, provide a new panel material for construction purposes in both product manufacture and structural assemblies. The aluminum sheet is pressure laminated to the hardboard. 1 lb. of the aluminum covering an area of about 14 sq. feet. The 4 by 8-ft. size is bonded to flexible hardboard for use on work where bending is required. The 4 by 12-ft. size is bonded to rigid hardboard. Both can be cut and shaped with ordinary tools.

If you write maker identify as IEN - 12534

WATER TREATING . . Catalytic unit to soften water and loosen scale

Source: EVIS MANUFACTURING CO. 38-42 Boardman Pl., San Francisco 3, Calif.

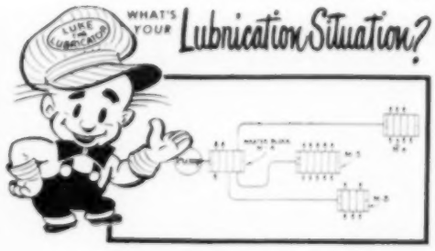


Mounts in pipe line

Metal element is enclosed in a housing that applies as a fitting in a pipe line carrying water to heating and processing equipment in this new Evis Conditioner. The element acts upon the water to soften it and to loosen scale that has accumulated on internal surfaces. Units are available for application in ½ to 10-in. pipe. Length ranges from 3¼ to 20 in. with diameter at 2¼ to 17 inches. Weight is 1¼ to 300 pounds. Standard line pressure is 125 pounds. Three sizes, between 1 and 1½ in., rate 200 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12535



It doesn't make any difference to us.

Our business is to deliver oil or grease to your bearings in measured amounts, despite your lubrication situation.

We do it automatically, with a patented system of progressive feeders which guarantee that no bearing will be short-changed. Size, type, motion or location don't matter.

Get your bearings on a Trabon system. Your neighboring plant probably has one in operation.

There are more Trabon Lubrication Systems in operation than all other makes.

(Reversible and Manifold Systems)

Bulletin 529 is yours for the asking.

Trabon Automatic Lubrication Fits Any Bearing Situation.

Trabon ENGINEERING CORPORATION

If you write maker identify as IEN - 12536

OTC 17½ TON HYDRAULIC OPEN THROAT PORTABLE PEDESTAL PRESS

ONLY $199.95

SAVES HOURS AND DOLLARS ON EVERY JOB

An unbelievable low price for this amazingly efficient Portable Pedestal Press and 17½ ton Power-Twin Hydraulic Puller . . . a must for every maintenance shop. Pays for itself on the first few jobs in time, tools and money saved.

Use it for pressing bearings, bushings, pins, for bending, straightening, compressing, spreading, etc. Move it where you want it—it's portable.

STRONG . . . will handle 95% of all pulling or installing jobs.

COMPACT . . . Base is only 20" x 21" — 34¼" from top of press plate to floor. Press Plate throat is 7½" deep, 6" wide, 10½" clearance between uprights, 11" from Ram to press plate with almost unlimited vertical adjustment. Weighs less than 200 lbs.

VERSATILE . . . POWER-TWIN Hydraulic Unit may easily and quickly be detached for field service or other pulling jobs.

INEXPENSIVE . . . dollar for dollar . . . ton for ton . . . the lowest priced, most rugged and efficient Hydraulic Press on the market.

See your jobber for complete information or write us.

OWATONNA TOOL CO.

371 CEDAR STREET • OWATONNA, MINNESOTA

If you write maker identify as IEN - 12537

THE *Best* CASTER FOR YOUR PRODUCT

RALCO ROLLER

Rolls easily on rough surfaces, carpets, etc. Turns easily in any direction. Rolls right over cracks, wires and other obstructions. That's because Ralco Rollers' patented angle mounting gives the roll-over of a wheel twice its size. Models and sizes for every purpose.

WRITE FOR CATALOG

LISLE *Corporation*

CLARINDA, IOWA

If you write maker identify as IEN - 12538

Built into this 150 ton crane hook is a Baldwin SR-4® Load Cell that speeds and simplifies weighing of bulk materials. As loads vary, strains are transmitted to a compression member inside the Load Cell and in turn to a grid of very fine wire. As length of the wire is changed, resistance changes . . . and weights can be measured with an accuracy, speed and safety impossible with more conventional systems.

If you are interested in crane weighing, batch weighing, or any other type of weighing, you'll find Baldwin Load Cells offer a unique solution. Other SR-4 devices can solve your problems in measuring torque, pressure, explosions, etc.

BALDWIN-LIMA-HAMILTON

Testing Headquarters . . . Philadelphia 42, Pa.

In Canada: Peacock Bros. Ltd., Montreal, Quebec

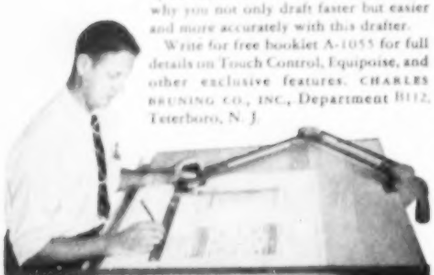
If you write maker identify as IEN - 12539

DRAW 40% FASTER with a Bruning Machine

Tests prove you draft as much as 40% faster with a Bruning machine that combines your five basic instruments . . . T-square, straightedge, triangle, protractor, and scales . . . into one precision unit.

There are no waste motions of picking up and laying down separate tools. That's why you not only draft faster but easier and more accurately with this drafter.

Write for free booklet A-1055 for full details on Touch Control, Equipoise, and other exclusive features. CHARLES BRUNING CO., INC., Department B112, Teterboro, N. J.



BRUNING

Everything for the Engineer and Draftsman.

If you write maker identify as IEN - 12540

plain-end pipe Joined in 30 seconds

A permanent, "Flexible-Tight" joint in just 30 seconds. No threading, no exact pipe fitting or alignment necessary. Resilient rubber gaskets in the Dresser Style 63 give you permanent protection against vibration, normal expansion and contraction stresses that spring leaks in other joints.

Sizes ½" to 2". Write for catalog.

A complete line of couplings, etc., also available.

DRESSER "NO-THREAD" FITTINGS

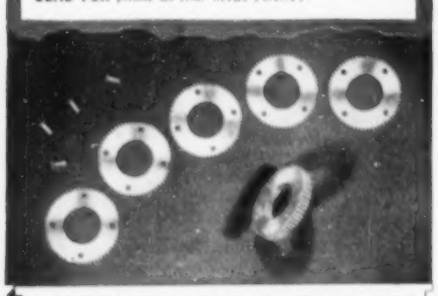
Dresser Mfg. Div., 39 Fisher Ave., Bradford, Pa. • Dist. of the Dresser Industries. Warehouses: 1727 Rothwell St., Houston, Tex.; 101 S. Renshaw Highway, S. San Francisco, Calif. — Sales Offices: New York, Philadelphia, Chicago, Houston, South San Francisco — In Canada: 629 Adelaide St., W., Toronto.

If you write maker identify as IEN - 12541

WINZELER STAMPED GEARS OFTEN SAVE UP TO 60 PER CENT!

WINZELER has developed fine *Stamped* Gear-making to a new high degree of perfection. Now, all tooling, stamping and assembling operations are performed with remarkable skill and precision. Compound precision dies hold flatness, tolerances and dimensions to exacting specifications. Individual stampings can be laminated and indexed to produce tender *laces!*

SEND FOR *samples, ideas and low estimates. Write or phone us your needs TODAY.*



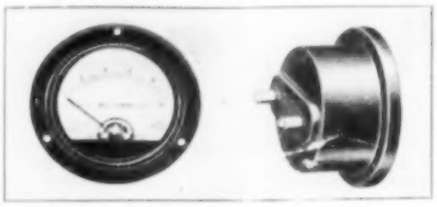
WINZELER MFG. & TOOL CO.

1716 WEST ARCADE PLACE • CHICAGO 12, ILLINOIS

If you write maker identify as IEN - 12542

METER . . Electric instrument, ruggedized design in three sizes

Source: HICKOK ELECTRICAL INSTRUMENT CO. 10544-48 Dupont Ave., Cleveland 8, Ohio



Data and specifications in Catalog 26

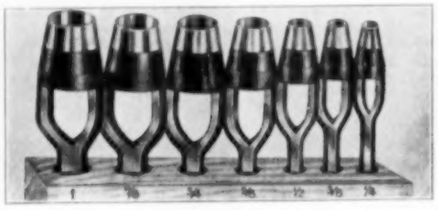
Internal pivot construction is employed in the shock proof movement of this new line of ruggedized meters. Jewels are mounted in a solid metal case. Pivots are on the inside of the moving coil. The mechanism is shock mounted in a low temperature rubber compound bonded to the base. Jewels and pivots can be removed and replaced if servicing is required. The case is hermetically sealed at the factory. The design permits opening and resealing in the field.

The line includes ac. and dc. milliammeters, microammeters and voltmeters. It also includes dc. ammeters. Three body diameters are 2¼ to 3½ inches.

If you write maker identify as IEN - 12543

PUNCHING . . Hand tool set to cut holes through soft materials

Source: AUBURN DIE CO. 59-63 Washington St., Auburn 6, Maine



Supplied in wood holder

Sizes range from ¼ to 1 in. in a new No. 8 set of hole cutting hand punches that has been added to the company's line. Sets in other sizes contain punches ranging from ¼ to 2½ in. in diameter in steps of $\frac{1}{16}$ inch. Each is made of tool steel. Applications are in materials such as leather, cloth, fiber.

identify as IEN - 12544

You can make motion pictures in complete darkness if you set up your standard 16 or 35-mm. camera with the new Kodak Spectroscopic I-N film and add some infra-red invisible illumination. You can use the same film without the added lighting in semi-darkness. The film will picture audience reaction in a darkened theatre. It will record the flow and action of molten or hot metals without any supplemental illumination.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12545

USE JOMAC®

INDUSTRIAL WORK GLOVES

For better hand protection, Jomacs will increase production by helping to reduce injuries in your plant. Made of Jomac Cloth — the famous thick, twisted loop pile fabric.

WASHABLE • FLEXIBLE • INTERCHANGEABLE • RESIST CUTTING, PROTECT AGAINST HEAT AND COLD

Write for samples and prices—describe intended use

C. WALKER JONES CO., PHILADELPHIA 38, PA.

If you write maker identify as IEN - 12546

it's paper

...BUT IT MAKES DIRT COME CLEAN

No need to shake out a dirty vacuum cleaner bag today, thanks to modern cleaners with throw-away bags made of a special Riegel paper. Porosity of this paper is carefully controlled to handle large volumes of air yet stop the smallest particles of dust.

This is only one among hundreds of unusual papers Riegel makes for industrial needs . . . many with surprising technical properties. Tell us what you want paper to do for you . . . if we can't supply it we'll gladly tell you who can. Write today.

RIEGEL PAPER CORPORATION • P. O. Box 170 • Grand Central Station • New York 17, N. Y.

Riegel

• TAILOR-MADE PAPERS FOR INDUSTRIAL USE •

If you write maker identify as IEN - 12547

DETECTO SCALES

There's a precision-accurate Detecto Scale for your specific weighing and counting need. The Detecto helps increase production, yet assures you maximum accuracy by making slightest weight discrepancies immediately visible.

DETECTO-GRAM RATIO COUNTING SCALE

Another Detecto-Gram Scale to speed counting operations. Model No. 1743 has a special counting tray attached to the beam for use when counting in odd amounts.

Write for Catalogue

DETECTO SCALES • INC.

MAKERS OF FINE SCALES SINCE 1900

553E PARK AVENUE • BROOKLYN 5, N. Y.

SCALE ENGINEERS IN ALL PRINCIPAL CITIES

If you write maker identify as IEN - 12548

Save TIME and HEADACHES

TRANSPARENT WORK RECORD HOLDERS

Because they keep work records clean and understandable, transparent work holders reduce costly mistakes in office and factory — and step up production. T.P.A. envelopes by NAPLASCO are the quality leaders, featuring crystal clear plastic, leatherette bindings and reinforced corners. They are needed wherever men work to eliminate confusion, "misunderstands" and alibis . . . and are particularly desirable on defense contracts where clear records are a "must."

TRADE MARK

Naplasco

T.P.A. HOLDERS

Come in sizes and styles to meet your special needs . . . for work records, job ticketing, material control and many other uses.

Write for low prices. FREE SAMPLE while supply lasts.

Makers of Binder envelopes • Blue Print Holders
Workshop Envelopes • I. D. Card Holders
Billfold Inserts • Plastic Specialties.

NATIONAL PLASTIC COMPANY

16 EAST 23RD STREET, NEW YORK, N. Y. • (GRamercy 7-1399)
8 SOUTH DEARBORN, CHICAGO, ILLINOIS • (CEntral 6-0023)
Main Office and Factory:
3591 E. FOOTHILL BLVD., PASADENA, CALIF. • (RYan 1-8147)

If you write maker identify as IEN - 12549

If you write maker identify as IEN - 12550

MIX IT WITH A "Lightnin' Mixer"

Mix fluids quickly, at low cost, in any open vessel. Dissolve powders or crystals . . . get uniform solutions and emulsions . . . keep solids from settling . . . improve quench bath performance. These are just a few of the ways you can use Lightnin Mixers to *save time* and *speed up production.*

FULLY GUARANTEED

Thousands of Lightnin Mixers are on the job today. Many of them have been in service 20 years and more. More than 30 models to choose from—electric or air driven; direct or gear drive. Every Lightnin Mixer is guaranteed to do the job—and do it *right*—or your money back!

HOW TO GET BETTER MIXING

New folder gives 24 tips for using portable mixers to save time, cut costs. Just ask for "24 Ideas" Folder, plus big 28-page catalog fully illustrating and describing Lightnin Portable Mixers. Send today!

Also Lightnin SIDE ENTERING Mixers (1 to 25 HP) and TOP ENTERING Mixers (¼ to 500 HP). Write for catalogs.

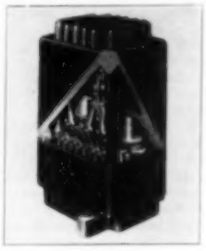
MIXCO FLUID MIXING SPECIALISTS

MIXING EQUIPMENT CO., Inc.
124 Mt. Read Blvd., Rochester 11, N. Y.
In Canada: William & J. G. Greey, Ltd., Toronto

If you write maker identify as IEN - 12552

ELECTRONIC PART . . Unit assemblies, of one to four tube plug-in circuits

Source: TECHNICAL DEVELOPMENT CORP. 4062 Iace Blvd., Culver City, Calif.



Replaces to service

Aluminum housing is die cast to enclose and seal the tubes and accessory parts and connections for a complete one to four-tube electronic circuit in this new Unistage electronic sub-assembly. It is available in basic form for installation of a desired circuit to comprise the housing, terminal board with coded terminals, tube plate and the tube well or wells.

The company also is prepared to supply the completely equipped assemblies ready for plug-in installation. Fins on the housing help to dissipate heat. Dimensions are 2 in. in width, 4¾ in. in height and about 1½ to 5 in. in depth.

If you write maker identify as IEN - 12553

PAINTING . . Rubber base primer will seal fresh plaster, new concrete

Source: TROPICAL PAINT & OIL CO. 1244-48 W. 70th St., Cleveland 2, Ohio

Presents seven advantages

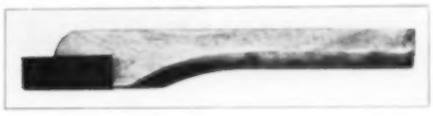
Pigmented primer is a new liquid material based on synthetic rubber resin. It will prime, seal and cover in one coat. It dries in two to four hours to permit application of a finish paint coat in the same day. It can be applied on fresh plaster, new concrete, cement or cinder block and on wet walls after they have been wiped dry.

It provides a vapor barrier preventing penetration of moisture to outside walls. It will not support mold or mildew on inside walls. It applies uniformly, free from streaks. Plaster patches or sealed cracks will be free from "shine".

If you write maker identify as IEN - 12554

POLISHING . . Abrasive rubber tool to clean commutators and slip rings

Source: H. F. HUNTER SALES 313 Cypress Way, Pittsburgh 28, Pa.



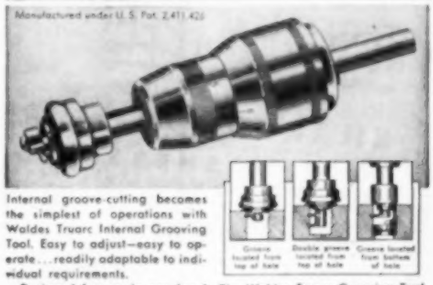
65 cents for single units

Wood handle mounts a rectangle of non-conducting abrasive rubber in the assembly of this new Commutator Cleaner. The non-conducting rubber portion measures about 1⅛ by ¾ by ¾ inch. It will remove encrusted dirt, scale, and produce a polished surface on the commutator bars or on the contact surface of slip rings. Overall length is about 5 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12555

Waldes Truarc Internal Grooving Tool
for precision cutting of internal grooves in bores and housings
FAST! ECONOMICAL! NEEDS NO SKILLED LABOR!



Internal groove-cutting becomes the simplest of operations with Waldes Truarc Internal Grooving Tool. Easy to adjust—easy to operate . . . readily adaptable to individual requirements.

Designed for use in any hand drill or automatic drill press and screw machine . . . assures a concentric recess without injury to metal. Operates by fingertip pressure—especially suitable for unskilled operators.

The Waldes Truarc Grooving Tool when used in an electric or pneumatic hand drill, can be taken to the job eliminating disassembly and excessive handling . . . resulting in all-around savings in time and costs!

Write now for descriptive brochure giving mechanical details, cutting sizes . . . extra features

WALDES TRUARC GROOVING TOOL
WALDES KOHINOOR, INC.
47-16 Austel Pl., Long Island City 1, N.Y.

If you write maker identify as IEN - 12556

From shop hoist to truck hoist . . . in seconds!

UNIT "Utility" HOIST gives greater load travel plus three lifting points with capacities ranging from 1000 to 2000 lbs.

Hydraulically operated for shop, truck or machine, the Unit Hoist makes quick work of special handling operations. Setting pipe and water hydrants, working in manholes, reaching over obstructions are easy with the new 12" Boom Extension and optional Sheave Attachment.

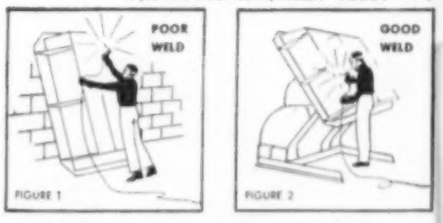
REDUCE material handling time. Unit gives you perfect load control plus portability. Portable floor frame permits moving to any job in the shop. Hoist when transferred to any truck equipped with well swings 360° freely and locks in traveling position. *Write for Hoist Bulletin U-2.*

THE BEST WHEN HANDLING:
Drums, Motors, Boxes & Crates, Transmissions, Pipe, Tires, Farm Machinery, Fixtures, Hydrants

UNIT — Manufacturers of hydraulic cylinders for original equipment

UNIT MANUFACTURING CO.
1279 HARMON PLACE • MINNEAPOLIS 2, MINN.

If you write maker identify as IEN - 12557



How Worthington Welding Positioners help your welders produce BETTER WELDS

When your welder has to climb over, prop, or flop the work, he's wasting time and can only obtain good downhand welding over a limited area (Figure 1). With a Worthington Welding Positioner, the work is quickly tilted or rotated automatically into position for correct downhand welding. Write for Bulletin 210D. Worthington Corporation, Plainfield, N. J.

Y 2.5

WORTHINGTON
Welding Positioners—Turning Rolls

If you write maker identify as IEN - 12558

where performance of product or process demands dependable timing specify . . .

Cramer

Widely used in industrial controls for heat treating, for the control of plastic and injection molding, lapping, induction heating, mixing and agitation, purging gas fired ovens, etc. — where accuracy of timing improves quality, reduces supervision or vitally protects the process or equipment itself — the Cramer Type TEC Time Delay Relay provides an adjustable time delay between the operation of a control circuit and the subsequent closing or opening of a load circuit. Designed for dependable, trouble-free service . . . compact construction extremely accurate.

For complete details of the Type TEC — and other dependable Cramer timing instruments — send today for copy of new Cramer Catalog.

the R. W. CRAMER CO., Inc.
BOX 16, CENTERBROOK, CONN.

If you write maker identify as IEN - 12559

The LaPointe Plascomold Corporation, producer of electronic components, installed a Robinson Metering Pump to increase production of their "Mighty Match" television divider networks. The pump not only reduced unit costs, but ejected "Plastisol so accurately that a change in design was made—affording a saving in material and still greater economies.

This versatile production tool may solve some of your problems. Write for further information today!

- Forcibly ejects fluid compounds—not a gravity dispenser
- Controls heat thermostatically
- Ejects fast—accurately
- Change discharge rapidly without tools
- Reduces unit costs—no skilled operator needed
- Adaptable to any production technique

*Registered Trade Name

EDWARD F. ROBINSON
INCORPORATED
P.O. Box 47
95 PARK AVE. · NUTLEY 10, NEW JERSEY
Telephone NUtley 2-4510

If you write maker identify as IEN - 12560

DON'T RISK PAINT FAILURE

New, free book brings industrial painting facts up to date. We don't make paint. But to help you get full value from the paint you buy, we'll send you this fact-packed book on aluminum paints. Read it before you plan another paint job. It can save you time and dollars.

You may know that aluminum paint is best for many places in your plant, but do you know what *kind* of aluminum paint is best for each job? Some are specially formulated for painting metal and masonry, others for wood, others for heated surfaces. Mail the coupon for the free book that answers these and hundreds of other paint questions.

SEND FOR FREE BOOK

ALUMINUM COMPANY OF AMERICA,
Paint Service Bureau, 1786-L Gulf Bldg., Pittsburgh 19, Pennsylvania.

Please rush me free copy of "Painting with Aluminum."

Name (please print) .....
Address .....
City ..... State .....
We plan to paint the following .....

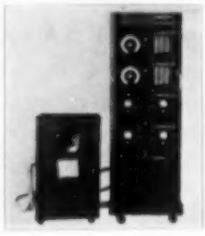
Look for this shield on aluminum paints made by many paint manufacturers using ALCOA PIGMENTS.

ALCOA ALBRON

If you write maker identify as IEN - 12562

COUNTING . . Electronic equipment indicates and prints in set interval

Source: NORTH AMERICAN PHILIPS CO.
748-52 S. Fulton Ave., Mount Vernon, N. Y.



Portable assembly

New scaler-printer is currently available with a capacity of two channels, 64,000 counts each, to count radiation and to apply in operations such as packaging. Action is electronic with the count stored in a memory circuit until completion of a pre-determined counting interval. Then the memorized count is channeled into the mechanical printer shown in the illustration to the left of the counter assembly. Digit wheels operate independently of one another to set up the total in the printer and impress this total upon the tape.

Operation is on 110 volt 60-cycle ac. The instrument indicates to 999 and multiplies this figure in six steps between 2 and 64. It will resolve pulses separated by 5 microseconds. A motor driven interval timer permits setting any counting range to 55 seconds. Three rows of neon lamps, in decimal arrangement, also indicate the count on the instrument face. A negative input pulse of about 1-volt amplitude is required. About 200,000 such pulses can be handled per second.

If you write maker identify as IEN - 12563

VALVE . . Pressure regulator for inlet air pressure to 150 pounds

Source: DAYTON ROGERS MFG. CO.
2822-26 13th Ave. S., Minneapolis 7, Minn.

$11 to $19.50 complete

Bronze body and pressed steel bonnet in this new design of the company's pressure regulator replace die castings in the assembly previously described IEN-7841-47. The diaphragm enclosed in the body is made of Neoprene. The valve seat is a special Neoprene compound. The new assembly includes a stainless steel valve pin and screen surrounding the valve port.

Four sizes are included in the line ranging from ¼ to ¾ in. inlet and outlet. Mounting is on a metal bracket equipped with two vibration dampers. A pressure gage connects to the outlet side.

Identify as IEN - 12564

New spindle adapter applies on the DeWalt radial woodworking saw to take drills with ¼ in. shanks. It permits horizontal hole drilling in work held vertically against the back rail of the radial machine. Holes can be drilled square or at a horizontal angle by positioning the radial arm while the motor is aligned with it. The adapter applies on the Power Shop machine. It costs $2.50.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12565

If you write maker identify as IEN - 12566

RECEIVING...PRODUCTION... WAREHOUSE...SHIPPING... MAINTENANCE

every department can use the CM CYCLONE

HIGH SPEED—HEAVY DUTY—ALUMINUM ALLOY
CHAIN HOIST

CAPACITIES: ¼ TO 10 TON

- Help your men get lifting jobs done quicker, safer, with less physical effort. Increase labor dollar return. PORTABLE—Carry with one hand. EASY OPERATION—Less hand chain pull. LOW HEADROOM—Highest possible lift. HERC-ALLOY flexible welded load chain. Lifetime lubrication. *More CYCLONE Hoists are in use today than any other hoist in their class.*

CYCLONE CATALOG NO. 145
Illustrates, describes and prices all models. Sent on request or ask your CM Distributor.

CHISHOLM-MOORE HOIST CORPORATION
(Affiliated with Columbus McKinnon Chain Corporation)
GENERAL OFFICES AND FACTORIES: TONAWANDA, N. Y.
SALES OFFICES: New York • Chicago • Cleveland

If you write maker identify as IEN - 12567

INCREASE PRODUCTION with Grafo LUBRICANTS

COLLOIDAL GRAPHITE for DEPENDABLE LUBRICATION

THERE IS NO BETTER LUBRICANT—NO SUBSTITUTE

A dispersion of Grafo colloidal graphite in petroleum, oil, water, castor oil, or other vehicle to meet your requirement is available. Reduce friction, extend lubrication cycles.

PERFORMANCE PROVED

On industrial applications such as Hot and Cold Forging, Drawing, Stamping, Steam Cylinders, Wire Drawing, Metal Extrusion, Impregnation, Parting Compounds, Die Casting—All Rubbing and Sliding Surfaces—High or Low Temperatures.

Write Us Regarding Your Special Applications

GRAFO COLLOIDS CORPORATION
MANUFACTURERS OF Grafo COLLOIDAL PRODUCTS
299 WILKES PLACE
SHARON, PENNSYLVANIA

If you write maker identify as IEN - 12568

Sensationally **NEW** *and Different!*

10 to 1

GRIPSO *Multi-duty* PLIERS

This amazing, new 3-piece tool is in a class by itself! Pressure applied on handle is increased on jaws *10 times*. Jaws open parallel in 4 positions, giving non-slip grip on nuts, bolts, pipe, etc. Forged chrome-moly steel. 8" long.

Amazing compound leverage pays off in hard-to-reach places, difficult angles.

Powerful grip—cannot be pulled off tang of file—will not slip off cotter keys.

Dealer & Jobber Response Invited
For more information write—

H. R. BASFORD CO.
235 25th St., Dept. M-6, San Francisco, California

If you write maker identify as IEN - 12569

Now HIGH-NICKEL ALLOY STRIP

including
- temperature compensation alloys
- low expansion alloys
- high permeability alloys
- glass sealing alloys
- electrical resistor alloys

. . . rolled to *precision tolerances* and to *ultra-thin gauges*

WE'RE READY to meet your requirements for nickel-iron alloys, nickel-chrome alloys, nickel-cobalt-iron alloys, and nickel-molybdenum iron alloys—*for one pound . . . or for thousands.*

WE REGULARLY CUSTOM-ROLL many kinds of high-nickel alloy strip up to 8" wide and down to .0005" thin—to tolerances as close as ±.0001".

WE'RE SPECIALISTS in cold-rolling a wide variety of metals—to your specifications . . . in any quantity. It's everyday work for us to roll strip to exacting specifications—the "tough ones" that commercial mills ordinarily refuse to produce.

WE ALSO CUSTOM-ROLL Phosphor Bronze • Brass • Nickel-Silver • Stainless Steels • Nickel • Monel • Haynes Stellite Alloys • Chrome Iron Alloys . . . and others.

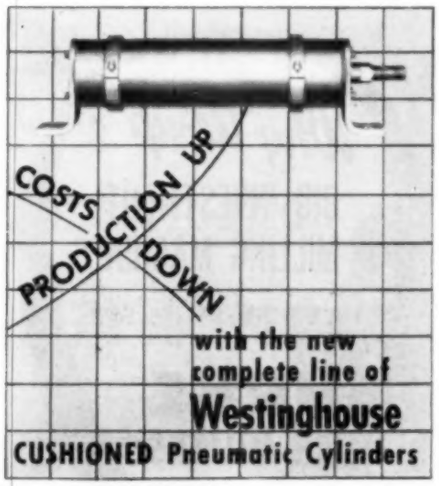
WE CARRY A WORKING INVENTORY of some metals . . . and also roll your metals on a toll basis. Our up-to-the-minute equipment includes precision 2-High, 4-High, and Sendzimir rolling mills . . . precision gang slitters . . . and continuous atmosphere annealers.

OUR ENGINEERING DEPARTMENT will be happy to assist you with your custom-rolling problems. Just write or call—and ask for our catalog.

INDUSTRIAL DIVISION
AMERICAN SILVER COMPANY, Inc.
36-03 PRINCE STREET, FLUSHING 54, N. Y.

Applying Science to Craftsmanship

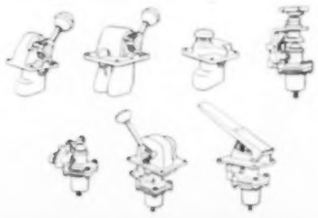
If you write maker identify as IEN - 12570



8 NEW PRODUCTION BOOSTERS

1. **Diameters: 1½" to 8" . . . any required stroke**
2. **Cushioned adjustable stroke**
3. **Flange, foot, swivel, or trunnion mounting**
4. **Pressure type end seals against leakage**
5. **Rotating heads for easy installation**
6. **Solid construction**
7. **Stock heads, rods and barrels assemble to meet requirements**
8. **Packing cups of famous "WABCO" composition**

. . . and a complete range of modern pneumatic controls



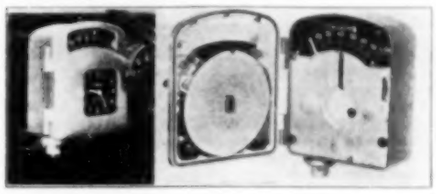
INDUSTRIAL PRODUCTS DIVISION **WESTINGHOUSE** AIR BRAKE COMPANY WILMERDING, PENNA.

Factory Branch: Emeryville, Calif. Distributors Throughout the United States . . . Consult Your Classified Directory. Distributed in Canada by: Canadian Westinghouse Co., Ltd., Hamilton, Ontario

If you write maker identify as IEN - 12572

RECORDING . . Vehicle tachograph to analyze active and idling intervals

Source: WAGNER ELECTRIC CORP.
6414 Plymouth Ave., St. Louis 14, Mo.



The chart tells the story

Model AA designates new design of the Sangamo tachograph, previously described IEN 8-41, which the company is distributing nationally. The instrument is an assembly of speedometer, clock, odometer, speed change counter and a signal light. It provides a graphic record of speed in miles per hour, of miles traveled over a certain period, of engine idling and motion of the truck.

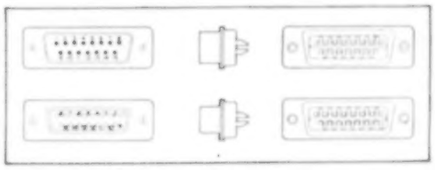
It makes a totalizing count of speed changes, lights a red signal lamp when speed reaches a predetermined point. The unit takes the place of a speedometer on a vehicle instrument panel and is connected to the original speedometer cable. Its two electrical leads are connected into the ignition and the dash light circuits.

Changes have been made to improve appearance and, at the same time, provide a durable case and mechanism. The housing is made of cast aluminum. The warning light can be set by the vehicle operator to conform with a prevailing speed limit. The chart on which the record is made is inserted on a rectangular stud in the instrument.

If you write maker identify as IEN - 12573

CONNECTOR . . Sub-miniature design, 15 to 50 pin and socket contacts

Source: CANNON ELECTRIC CO.
P. O. Box 75-A, Lincoln Heights, Los Angeles 31, Calif.



Detail information in Bulletin D-1

Series D is a new design of multiple contact pin-and-socket connector. It is available in four assemblies with 15, 25, 37 and 50 contact points. The smallest unit has overall dimensions of about 1½ in. in length by a little under ½ in. in width and depth. Solder pot extension measures about ⅛ inch.

The steel shell encloses a Nylon insulator in which the gold plated 5-amp. contacts are assembled. Minimum flash over rating is 1,500 volts on ac. The new units are suited for rack and panel mounting and can be used as plugs on either side by the addition of a junction shell having an integral clamp. Major applications are in connection with small instruments, computer circuits, telemetering equipment.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12574

SURPRISING WAY TO CUT JANITOR COSTS

Sweeping floors with a Parker floor sweeper gives amazing savings over pushbroom methods. "$2,100 a year saving (with $150 investment)" . . . "⅔ of all sweeping man-hours saved" . . . "four times faster than pushbroom sweeping" . . . *these are bona-fide time study results in three plants.*

Parker sweeps all type floors. Collects and sweeps in one operation. Easy to empty. A money-maker in any building from large plant to small garage. Manual and motorized models. *Write for descriptive bulletin.*

PARKER INDUSTRIAL FLOOR SWEEPER

Parker Sweeper Co., 35 Bechtle Ave., Springfield, Ohio

If you write maker identify as IEN - 12575

the heavy-duty hoist for low headroom service

GAIN MORE LIFTING ROOM

NORTHERN HI-LIFT
HEAVY-DUTY
ELECTRIC HOISTS

Heavy load capacity combined with high hook lift—unique in heavy-duty hoists—is the major outstanding feature in NORTHERN HI-LIFT HOISTS, providing for more efficient use of work and storage areas. Capacities: up to 15 tons, standard. Cab control if desired.

Write for Bulletin H-110-163

NORTHERN ENGINEERING WORKS, 2615 Atwater St., Detroit 7, Mich.

NORTHERN CRANES AND HOISTS

If you write maker identify as IEN - 12576

New Speed and Versatility in drawing reproduction
. . . with Kodagraph Autopositive Paper

SEE HOW the Solvay Process Division, Allied Chemical & Dye Corp., uses this revolutionary paper which produces positive photographic intermediates *directly*, which can be handled in room light . . . exposed in Solvay's blueprint machine . . . processed in standard photographic solutions.

- **To increase protection.** Autopositive reproductions are made of drawings which would otherwise be exposed to wear and tear. These intermediates—with dense photographic black lines—produce sharp blueprints—even after hundreds of printings.
- **To provide photo-lasting files.** Autopositive intermediates, which have the lasting qualities of photographs, serve as the Home Office file record of all drawings forwarded to Solvay's Alkali plants in Syracuse, Detroit, Baton Rouge.
- **To eliminate costly redrafting.** Autopositive paper reclaims old, soiled drawings . . . cleans up backgrounds . . . intensifies line detail . . . produces "new quality" printmaking masters.
- **To expedite contracts.** Autopositive intermediates are sent to outside bidders so that the required number of extra prints needed for quotations can be made without delay.
- **To prepare plant reports quickly.** Autopositive intermediates are used as the "masters" to produce the required number of direct-process prints, revisions and additions can be easily made . . . and the basic form used over and over again.

Write for a free copy of "New Short Cuts and Savings," which gives typical examples of the way Kodagraph Autopositive Paper is saving time and dollars in thousands of drafting rooms.

EASTMAN KODAK COMPANY
Industrial Photographic Division
Rochester 4, N. Y.

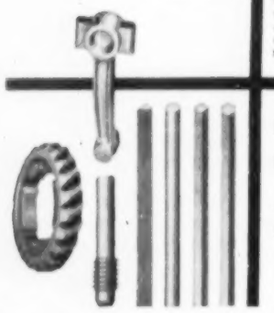
Kodak

If you write maker identify as IEN - 12578

MUELLER BRASS CO.
"600" SERIES
a better bearing
bronze containing
no hard-to-get tin

If you use gears, connecting rods or other parts requiring bearing properties, it will pay you to investigate "600" Series, a high strength bronze that contains no tin. "600" Series bearing metals can be forged into relatively complicated shapes and the forged shape is closer to finished size than a casting, often requires less machining, and eliminates the need of a bushing. "600" Series is available in standard and special extruded shapes in 12' mill lengths. These alloys have a low coefficient of friction, a tensile strength 2½ times greater than cast phosphor bronzes and high resistance to corrosion — write today for further facts.

Typical forged parts and rod shapes produced from Mueller Brass Co. "600" Series bearing bronze.



MUELLER
BRASS CO.
PORT HURON 27,
MICHIGAN

73-8

If you write maker identify as IEN - 12579

KNOCK OUT
HIGH HANDLING COSTS
with BARRETT
one-stroke
LIFT-TRUCKS

Barrett Red Junior is the low-priced work horse of ALL lift-trucks. Will handle 2500 lb. capacity loads from 36" to 48" wide—lift 1½" to 3½". Built for day-in-day-out tough, hard hauling. ONE STROKE raises skid—step on release treadle and hydraulic check lowers load gently. Operates in close quarters. Compound lift guarantees 25% easier operation.

Barrett Red Junior fits any type of skid. Just roll a pair of truck under skid and lift.

Write for Bulletin 5110.

BARRETT-CRAVENS COMPANY
4641 S. Western Blvd., Chicago 9, Illinois
Representatives in all Principal Cities
Canadian Licensee: C. A. Armstrong, Ltd., Toronto, Canada

BARRETT
One man does more than 3 or 4 . . . with a Barrett

If you write maker identify as IEN - 12580

TEMPILSTIKS°

the amazing Crayons that tell temperatures

in
WELDING
FLAME-CUTTING
TEMPERING
FORGING
CASTING
MOLDING
DRAWING
STRAIGHTENING
HEAT-TREATING
IN GENERAL

$2 each

gives up to 2000 readings

it's this simple

- Select the Tempilstik for your working temperature.
- Mark your workpiece with it.
- The Tempilstik will leave a liquid mark as soon as its specified temperature is reached.

Available in these temperatures (°F)						
113	213	313	450	850	1250	1650
125	225	325	500	900	1300	1700
138	238	338	550	950	1350	1750
150	250	350	600	1000	1400	1800
163	263	363	650	1050	1450	1850
175	275	375	700	1100	1500	1900
188	288	388	750	1150	1550	1950
200	300	400	800	1200	1600	2000

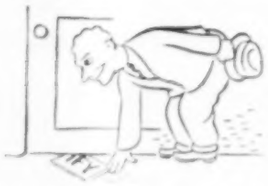
Also available in pellet and liquid form.

TEMPIL CORPORATION
11 West 25th St., New York 10, N. Y.

FREE—Tempil® "Basic Guide to Ferrous Metallurgy" —16½" by 21" plastic laminated wall chart in color. Send for sample pellets, stating temperature of interest to you.

NAME _____
COMPANY _____
ADDRESS _____

IDEAS FOR YOU



Items of particular interest in the news other than straight new products, development pointing toward the future, unusual procedure to accomplish a point, suggestions for practical action, each to provide ideas for you.

Identify as IEN - 12581

Windows admit sunlight without glare when the glass is covered with a new translucent shade made of Bakelite's Vinylite plastic sheeting. The material is cut to window-pane size and is applied on the wetted glass surface. It will stay

in place but can be peeled off without difficulty. It can be removed, rinsed in warm water and replaced. Eight colors are available from frosted translucent to blackout black from Transeal Ltd. in Plainfield, N. J.

Identify as IEN - 12582

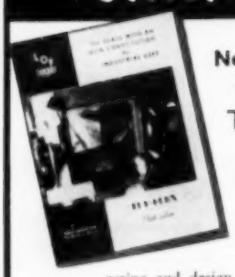
Students at Stanford University in California have designed a machine to make shell molds. The University is prepared to show it to manufacturers who desire to make these molds for themselves. The design is simple and the machine can be made in any welding and steel fabricating shop.

Identify as IEN - 12583

No need to confine your design thinking to metals alone when you have perforated sheet materials in mind. You can purchase perforated plastics also in most any form and finish from coated fabrics, vinyl film or sheet, woven plastic on a rubber backing to resin coated paper. Harrington and King in Chicago will supply the sheet material in required sizes and gages, with perforations in any pattern, size, spacing to pass air, liquids, light, sound, to decorate or decrease overall weight. The company has a little sample book it will send you on request.

If you write maker identify as IEN - 12584

FOR INDUSTRIAL APPLICATIONS
GLASS, 3-5 TIMES STRONGER!



New FREE FOLDER tells all about
TUF-FLEX
TEMPERED
PLATE GLASS

New free illustrated folder on Libbey-Owens-Ford *Tuf-flex*® Tempered Plate Glass gives engineering and design data; suggests applications for *Tuf-flex*, the glass that is three to five times stronger than regular plate glass.

Write for free bulletin T-F 8.

LOF GLASS
LIBBEY·OWENS·FORD
GLASS COMPANY
92112 NICHOLAS BLDG.
TOLEDO 3, OHIO

If you write maker identify as IEN - 12585

A-1035

EASTON
Furnace
Cars

EASTON experience covers small and large capacity furnace cars for every requirement, including electric self-propelled cars for automatic continuous heat treating systems.

EASTON CAR & CONSTRUCTION CO. • EASTON, PA.
NEW YORK • PHILADELPHIA • PITTSBURGH

If you write maker identify as IEN - 12586

Why tie-up
BIG INVESTMENT
MILLING MACHINES
with work that can be done quicker and easier on
BURKE
BENCH MILLERS

It is amazing how much miscellaneous and production milling can be shifted from large millers to rugged, accurate, economical Burke Bench Millers.

Complete data on hand-feed, power-feed and universal models and attachments sent on request.

Thousands now at work in production lines and tool, repair, development and school shops.

The Burke Machine Tool Co.
A Division of the
U. S. BURKE MACHINE TOOL CO.
BROTHERTON ROAD 5
CINCINNATI 27, OHIO

If you write maker identify as IEN - 12588

Hoist Away!

Portable pulling power . . . on the spot. Just plug in this powerful STAMPCO TUGGER wherever an electrical outlet is handy. The TUGGER'S high-torque hoisting motor delivers plenty of power to the drum . . . instantly . . . through a series of precision gears running in a continuous bath of oil.

Drum is reversed, electrically, at the flick of a finger. Furnished with either mechanical brake and switch control, or magnetic-type electric brake for remote control stations.

If you are "man handling" those back-breaking lifting and pulling jobs in your plant, remember this—ONE MAN—ONE HAND—ONE FINGER—operates the TUGGER. Reduces labor costs and accidents. A self-liquidating investment. *Write for free Catalog Bulletin today!*

STAMPCO

ST. ANTHONY MACHINE PRODUCTS CO.

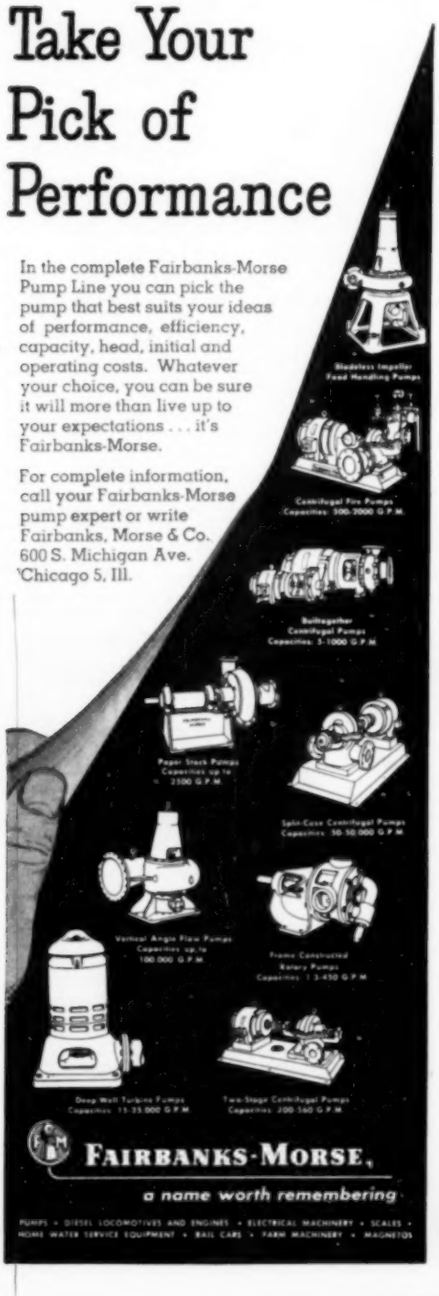
2446 East Franklin Ave. • Minneapolis 6, Minn.

If you write maker identify as IEN - 12589

Take Your Pick of Performance

In the complete Fairbanks-Morse Pump Line you can pick the pump that best suits your ideas of performance, efficiency, capacity, head, initial and operating costs. Whatever your choice, you can be sure it will more than live up to your expectations . . . it's Fairbanks-Morse.

For complete information, call your Fairbanks-Morse pump expert or write Fairbanks, Morse & Co. 600 S. Michigan Ave. Chicago 5, Ill.



FAIRBANKS-MORSE

a name worth remembering

PUMPS • DIESEL LOCOMOTIVES AND ENGINES • ELECTRICAL MACHINERY • SCALES • HOME WATER SERVICE EQUIPMENT • RAIL CARS • FARM MACHINERY • MAGNETOS

IDEAS FOR YOU—*Continued*

Identify as IEN - 12591

If you are not, as yet, "on top of the heap" let us tell you about the new book that suggests how to get there. We suggest immediate canvass among your friends and associates to find who among them may have copies of "How to Succeed in Business Without Really Trying". Here indeed is an "Idea for You". If you can borrow the book from an associate, before he has an opportunity to put its advice to work

for himself, you may be able to slow him up at absolutely no cost to you while you read the instructions and slip easily into that promotion you both have been amateurishly thinking about.

We advise all haste to your local book store if you cannot find a trustful lender. There the publisher, Simon & Schuster, has planted copies to ensnare $2.50 from you and any others who aim to be SOB's . . . Successful Opportunists in Business.

We saw an advertisement for the book in our favorite morning newspaper. Immediately we were interested as we read . . . "Men, are you having trouble finding the right backs to stab? Do you know which faces to step on? Can you appear to be busy when you are not? This completely reprehensible, immoral and unscrupulous little book tells you about how to get a raise . . . apple polishing . . . credit grabbing . . . how to get on top of the heap without any merit whatsoever . . . in short everything you need to know about Getting Ahead."

Imagine our excitement as we read those words? Here we had run into the very thing we are looking for continually . . . Ideas for You. We realized of course, even if a little wistfully, that we could not ourselves participate, relatives and fellow publishers being excluded from such prize winning and competitive opportunities as this one doubtless represents. Never the less we could tell you.

Accordingly we asked Simon & Schuster, 630 Fifth Ave., New York 20, N. Y., for a review copy (note this second mention of the publisher's name plus the address in case your book seller has raised the price.) We received it. We read it. Now we quote from its Introduction . . .

"Hand in hand with our rules and little exercises we will include bits of illustrative dialog. This is intended not to amuse but to clarify certain points.

"All but a very few of these illustrative bits were taken from life, and indeed from the very career of a man who was a living monument to the precepts of this work—and proof not only that our method can work, but that it has worked, and the evidence is there, for us all to see.

"Our character has been dubbed Pierrepont Finch, though there will be few among you who won't break into a sly smile of recognition as his career is unfolded."

Finally we bring you the Word of Caution that follows the introduction so you may not spend your own or your company's $2.50 without understanding just what you are heading into. Here is the Word—

"This book will be beneficial only to those who bring to it purity of thought. It is designed solely to show you how to succeed in business and to make money and will be effective only to those who read it with these aims in mind. Those who bring with them selfish motives will receive small comfort and scant benefit."

If you write maker identify as IEN - 12592

ONLY CYCLONIC COMBUSTION GIVES

Cyclonic Combustion, the revolutionary new flame control used exclusively in Cyclotherm steam generators, reduces heating surface requirements from 5 to just 3 sq. ft. per B.H.P.—produces 66% more heating power per sq. ft.

Cyclonic Combustion controls flame characteristics in a revolving spiral vortex traveling the full length of the furnace to insure the maximum in heat transfer without direct flame impingement or hot spots. This high heat transfer rate enables Cyclotherm 2 pass generators to maintain a guaranteed minimum efficiency of 80% for any steam requirement—at a saving of up to ⅓ the space of conventional package steam generators.

Cyclotherm steam generators with patented Cyclonic Combustion offer these additional features: Full power operation from a cold start in 15 to 20 minutes. Savings up to 50% on maintenance. Greater fuel savings. Boilers designed for oil or gas operation from 18 to 500 h.p., 15 to 200 PSI operating pressure.

Find out how Cyclotherm will fill your steam requirements. Write today for free illustrated folder.

CYCLOTHERM STEAM GENERATORS
DIVISION UNITED STATES RADIATOR CORP.

CYCLOTHERM, DEPT. 29, OSWEGO, NEW YORK

If you write maker identify as IEN - 12593

All the refinements of its big brothers!

Type GMS

60 lb. 30 kw.

DETROIT ROCKING ELECTRIC FURNACE

This compact, efficient 60-lb. furnace has all the features of the famous, large capacity Detroit Electric Furnaces that melt metal for world famous products. Type GMS produces uniform, high quality melts with efficient and economical use of power. It's excellent for limited production, and for experimental and educational use. New rocking controller, 3-phase motor and independently-mounted electrode brackets are new features . . . Sold complete with transformer. Write for information.

DETROIT ELECTRIC FURNACE DIVISION
KUHLMAN ELECTRIC COMPANY
1050 26th St. • BAY CITY, MICHIGAN

Foreign Representatives: in BRAZIL—Equipamentos Industriais, "Eico" Ltd., Sao Paulo; CHILE, ARGENTINA, PERU and VENEZUELA: M. Castelhi Inc., 150 Broadway, New York 7, N. Y.; MEXICO: Cia Proveedora de Industrias, Atenas 32-13, Apartado 27A3, Mexico 6, D. F., Mexico; EUROPE, ENGLAND: Bolec, Ltd., Birmingham.

If you write maker identify as IEN - 12594

Fans.. Blowers FOR ALL INDUSTRY

"Standard Units or Custom Design"

DOUBLE SWIVEL AEROSPOT

Fans and blowers in a wide range of standard size units are available for specific air moving and ventilating requirements. Special custom designed equipment can also be furnished. Our staff of engineers is at your disposal for competent advice on any ventilating problem. Correspondence invited, without obligation.

SEND FOR CATALOG TODAY!

For column or wall mounting. Saves valuable floor space. Direction of blast adjustable: 360° around Spindle Axis, 90° around Motor Support Axis. Sizes, 20" to 36".

6 Blade DYNAFLOW Unit

Also available in two and four blade types. Sizes, 16" to 36".

DUCTYPE BLOWER

Direct driven, single or twin-fan units. Also available with belt drive. Sizes, 16" to 36".

SOUTH BEND AIR PRODUCTS, Inc. 227 E. COLFAX AVE. SOUTH BEND, IND.

If you write maker identify as IEN - 12595

now

ONE GOVERNOR ONE MODEL . . .

for 9 out of 10 industrial and farm engines

● Instant variable speed selection and accurate engine control at any speed setting within 1200 to 2600 RPM. Higher and lower ranges obtainable by simple change of pulley. Also "constant speed" operation.

PIERCE LONG RANGE UNIVERSAL GOVERNOR

● Accurate, dependable speed control for engines operating corn shellers, drag lines, hoists, arc welders, trucks and tractors with power take-offs, etc.

List Price $39.50
Pulley Extra 4" $1.75 5" $1.75

Write for Complete Information

DEALERSHIPS AVAILABLE

THE PIERCE GOVERNOR COMPANY, INC.
1640 Ohio Avenue, Box 1000, Anderson, Indiana, U. S. A.

WORLD'S MOST EXPERIENCED GOVERNOR MANUFACTURER

If you write maker identify as IEN - 12596

Don't just write — Tape

Specify
JENKINS
Gold Seal Tape
FRICTION . . . RUBBER

. . . AND SAVE!

Every roll of Jenkins Gold Seal Tape goes further. It tapes up tight to the last inch . . . doesn't peel, dry out or ravel . . . one thickness insulates . . . sticks to the job under toughest conditions of heat, cold, moisture. Single rolls or 10-roll containers. Jenkins Bros. (Rubber Div.), 100 Park Ave., New York 17.

MADE BY JENKINS BROS. • MAKERS OF FAMOUS JENKINS VALVES

If you write maker identify as IEN - 12597

When You Buy a
BURGESS-MANNING Acousti-Booth
You Buy a 50%*
Reduction in Noise

When you invest in a Burgess-Manning Acousti-Booth you are purchasing better communications for your office or plant. Good hearing means fewer errors . . . more work accomplished.

Burgess-Manning booths are pleasing in appearance . . . easy to clean and maintain.

Model 601 Wall Booth of wood construction.

Write for Bulletin A-107

Model 210 Floor Booth of wood construction.

* Results of studies by a prominent research organization.

BURGESS-MANNING COMPANY
Architectural Products Division
5970-A Northwest Highway, Chicago 31, Illinois

If you write maker identify as IEN - 12598

Femco COMMUNICATION

"Straightening out a wrong placement of ingots in the soaking pits paid for our installation."

FOR MINES
FOR MILLS

Easy to Buy
•
Easy to Install
•
Easy to Use
•
Make Us Prove It

Femco
TROLLEYPHONE

Uses existing wires and power supply to provide clear voice communication over loud speakers. Bulletin No. 25.

Femco
AUDIOPHONE

Wherever wires can be laid or run you can have Femco Audiophone systems installed. Bulletin No. 26.

LOW COST • LOW MAINTENANCE

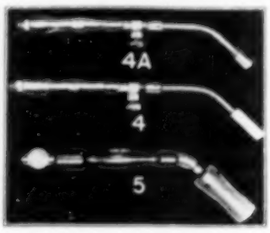
YOUR VOICE OF ACTION

FARMERS ENGINEERING
A MANUFACTURING COMPANY
549 Brighton Ave., Pittsburgh 21, Pa.

If you write maker identify as IEN - 12599

HEATING . . Gas fired torches for operation on liquid petroleum gas

Source: MUTUAL LIQUID GAS EQUIPMENT CO.
3606 W. Imperial Highway, Inglewood, Calif.



With hose connections

Three new torches have been added to the company's line of similar equipment for specified uses. Number 4-A, at the top of the illustration, produces a small pointed flame for concentrated heat in restricted areas. It is particularly suited for lead burning, light brazing, soldering. Number 4, in the center of the illustration, produces a broad flame suited for wiping joints, for heating and sweating large copper fittings, for melting compounds from electrical equipment.

Number 5 has been designed for preheating and melting. It will develop a flame temperature of about 2,400 deg. F. It employs a cast iron burner tube and insulated handle with a wheel type needle valve. It is intended to pre-heat compound joints, and is suited for welding operations.

If you write maker identify as IEN - 12600

RECTIFYING . . Dual electronic, 2 to 15 amperes on 110 or 220 volts

Source: ELECTRONIC RECTIFIER CO.
1460-64 E. Main St., Rochester 11, N. Y.

New rectifier actually is an assembly of two separate duplicate units each rating 2 to 15 amp. on 110 or 220 volts, with specified as input. The two are assembled in a steel housing that measures about 15 by 6 by 17 inches. Connections are made through a switch to close the circuit to one or the other of the units as required. Application includes power supply for magnetic chucks, separators, dc motors.

Identify as IEN - 12601

Colonial Broach reports on its use of crushing to dress grinding wheels employed in its manufacture of surface broaches to intricate shapes of extreme accuracy. The resulting surface broaches are smooth and have excellent finish. Intervals required for delivery have been materially shortened as compared with the company's previous production methods. The crushing operation starts with production of an exact master form tool. It is employed to machine a cast-iron roll. The roll applies on the grinding machine to crush dress the grinding wheel. The wheel then grinds the surface broach.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

If you write maker identify as IEN - 12602

What's in a Name?
PLENTY!...
IF THE NAME IS
Prep-n-Cote

The Outstanding
PHOSPHATE COATING PRODUCT
for Iron, Steel and Aluminum

Phosphate coating is an accepted procedure for preparing metals for enduring paint protection, and Prep-n-Cote represents the finest product for this purpose . . . Phosphate coat and chemically condition metal . . . Reduce phosphatizing and attendant maintenance cost . . . Eliminate sludge and scale from processing . . . provide a metal conditioning and phosphate coating process for all manufacturers regardless of their available equipment. Prep-n-Cote is economical to use.

WRITE FOR BULLETIN 48-91.

NEILSON CHEMICAL CO.
2402 Tecumseh Rd., Windsor, Ont. — 6064 DENSON ST., DETROIT 7, MICH. — 3611 Union Pacific Ave., Los Angeles 23, Calif.

If you write maker identify as IEN - 12603

NEW MAGNA BIT HOLDER

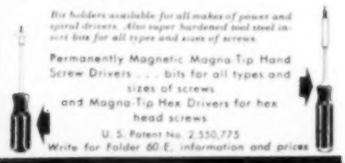
A REVOLUTIONARY, LABOR SAVING TOOL. CUTS SCREW DRIVING COSTS 3 NEW WAYS

Hand starting or pre-positioning screws in assembly operations is no longer necessary; a high energy *permanent* magnet in bit chuck holds the bit and energizes it with 10 times the "pull" to hold the screw *firmly* on bit. Labor costs are cut.

Reduces bit costs through the use of super hard, low-cost interchangeable insert bits.

Reduces bit wear and replacement since the energized bit seats itself positively in the screw slot or recess.

Bit holders available for all makes of power and spiral drivers. Also super hardened tool steel insert bits for all types and sizes of screws.



Permanently Magnetic Magna-Tip Hand Screw Drivers . . . bits for all types and sizes of screws
and Magna-Tip Hex Drivers for hex head screws
U. S. Patent No. 2,550,775
Write for Folder 60-E, information and prices

MAGNA DRIVER CORP.
779 Washington St. Buffalo 3, N. Y.

If you write maker identify as IEN - 12604

Explore the possibilities of this NEW DEVELOPMENT

. . . . . a series of ANTI-FRICTION BEARINGS for use where space is limited . . .

BALLBEARING BUSHINGS

This new series of Double Row (DR-L) Light Ball Bearing provides efficient anti-friction performance within a section height as little as 1/4". Ample grease capacity assures long life and eliminates the constant danger of "no lubrication" in the hard-to-get-at places.

Available with bore tolerances made for press fit on selected shafting for shaft rotation; and loose fit on cold rolled shafting for outer race rotation application.

Send for illustrated literature, sizes and capacities. Consult our engineers on your application problems.

SPLIT BALLBEARING CORP.
LEBANON, N. H., U. S. A.

If you write maker identify as IEN - 12605

YOU CAN USE THIS HYDRAULIC HAND PUMP

Meets Aircraft, Ordnance and Domestic Specifications

ALUMINUM BODY — STAINLESS PISTON AND WORKING PARTS

★ Double Check Valve Holds Pressure At Any Position of Handle.
★ Pre-Set or Adjustable By-Pass or Pressure Relief Valve.
★ Equipped With Either Stem, Socket, or Extension Type Operating Handle.
★ Available In Two Standard Sizes, or to Your Special Specifications. Write for Quotation.

ALTEN
Foundry & Machine Works, Inc.
LANCASTER, OHIO

If you write maker identify as IEN - 12606

it's FAST
it's EASY
it's ECONOMICAL

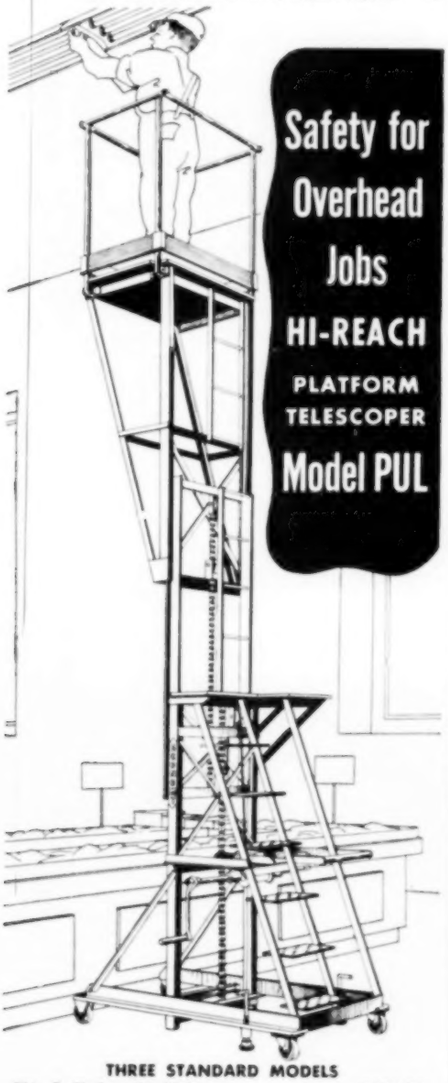
These high speed, sensitive tapping attachments are quickly and easily mounted on any drill press. They turn out clean, accurate threads just as fast as tapping can be done. A built-in friction clutch assures full protection to taps and work.

Details in Bulletin No. 22. See your Ettco-Emrick distributor or write to us.

Ettco-Emrick for Drilling and Tapping Equipment at its best

ETTCO TOOL COMPANY
591 Johnson Avenue
BROOKLYN 37, N. Y.

If you write maker identify as IEN - 12607



THREE STANDARD MODELS

No. 1—Platform lift 10'9"	$305.00
No. 2—Platform lift 11'9"	315.00
No. 3—Platform lift 15'0"	340.00

Equipped with 5" diameter base wheels
Rubber-tired wheels $8.00 extra
F.O.B. Chicago

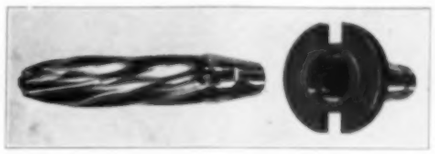
Other models with platform lift up to 95'
Write for complete specifications.

ECONOMY ENGINEERING COMPANY
4502 West Lake Street • Chicago 24, Illinois

If you write maker identify as IEN - 12609

BORING . . Quick change holder accurately centers and drives cutter

Source: FALCON TOOL COMPANY
20774 Ryan Road, Detroit 34, Mich.



Adaptable to any shank type cutter

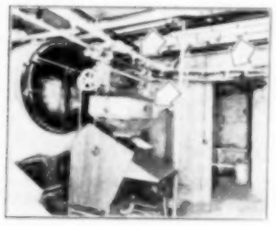
T-I-Drive trade names a new assembly of straight or taper shank holder and interchangeable taper shank cutters for boring, counterboring, drilling, milling, reaming. Each cutter carries a tapered shank to match the taper in the holder with machined entry and driving shoulders. The cutter is inserted and turned to the right to lock it in place. Two pins, at right angles to the bore, provide balanced drive. The taper assures accurate centering. Its angle is selected so the tool shank will not bind and the tool can be removed readily by turning to the left and then withdrawing.

Taper shank holders are available in a range of Morse tapers from No. 1 to No. 5 with body diameter at ⅞ to 3 in. and overall length from 4⅞ to 9⅝ inches. These holders will drive cutters ranging from ¼ to 4½ in. in diameter. A parallel line of straight shank holders range in shank size from ½ by 3 in. to 2 by 4½ in., body diameter from ⅞ to 3 in. and overall length at 5¼ to 7¾ inches. These will take the same range of cutters as the taper shank design. The company also is prepared to supply a wide variety of cutters in carbon steel, high speed steel, carbide insert.

If you write maker identify as IEN - 12610

CONVEYING . . Monorail equipment handles coal in a small boiler room

Source: NEY MFG. CO.
946-50 High St. S. W., Canton 11, Ohio



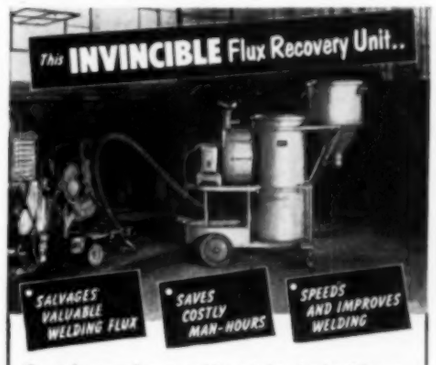
Brings coal from storage

Bottom dump carrier is suspended by a chain hoist from wheel equipped trucks riding a monorail track in this new conveyor equipment. The carrier handles 800 lb of stoker coal at a load. It measures 20 to 22 by 19½ inches. The chain hoist provides a means to lower the carrier to floor level when it is to be refilled. Additional available equipment includes a truck on which the carrier can ride beyond the end of the monorail track when overhead clearances are not sufficient to install the track.

The overhead construction includes pipe supports for the track in formed sections with hangers at intervals and with upright pipe for locations where the track pipe cannot be hung from overhead. The truck wheels are ball bearing design. The company is prepared to supply the required equipment to meet given installation requirements.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12611



On submerged arc welding jobs, Invincibles recover all loose flux from the work, remove slag or fused particles, and return the unfused flux to the hopper of the welder. Invincibles do the job *automatically*—far more rapidly and efficiently than manual methods. Also by removing all fine dust (flux flour), Invincibles reduce welding rejects and speed production.

Write for FREE folder on Welding Flux Recovery Systems

INVINCIBLE VACUUM CLEANER MFG. CO.
DOVER, OHIO

If you write maker identify as IEN - 12612

with
SPENCER VACUUM

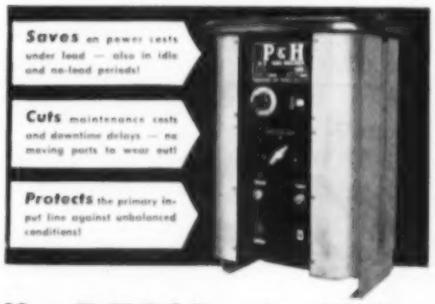
Vacuum pulls liquids uphill—from floors, sump tanks, electrical ducts, pontoons, any height up to six feet.

Any Spencer vacuum cleaner can be used for this purpose, but where large volumes of liquid are to be moved an additional wet separator is recommended. The Spencer Sump-Vac, for instance, is a complete unit which holds 125 gallons of liquid.

In more than 100 ways, sanitation and cleanliness are by-products of the savings in cost of production, when Spencer Vacuum is used. 132 applications are described in Bulletin No. 144.

THE SPENCER TURBINE COMPANY • HARTFORD 6, CONNECTICUT
SPENCER HARTFORD

If you write maker identify as IEN - 12613



New P&H DC Rectifier Welder
— with Dial-lectric Control

Gives you economy, quiet operation, balanced-line loading, and instantaneous remote control.

You get low-cost DC welding current without a generator, from this new P&H DC Rectifier Welder — industrial twin to the famous P&H AC Dial-lectric Welder. Two sizes: 200 and 300 Amps at 40V.

No troublesome mechanical devices to control amperage—simply turn a single radio-type knob. This and other P&H extra-value features help you realize savings on power consumption and maintenance.

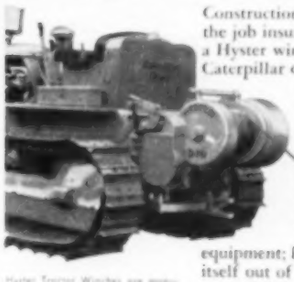
Ask your P&H representative or distributor for further information. Or write direct.

P&H WELDING DIVISION
HARNISCHFEGER CORPORATION
4520 WEST NATIONAL AVENUE
MILWAUKEE 46, WISCONSIN

Power Shovels • Crawler and Truck Cranes • Overhead Cranes • Hoists • Arc Welders and Electrodes • Soil Stabilizers • Diesel Engines • Pre-Fabricated Homes

If you write maker identify as IEN - 12614

HYSTER® Winches have *R-E-A-C-H* and *Pull Power* for any construction job...



Construction men all know the job insurance provided by a Hyster winch mounted on a Caterpillar diesel tractor. The winch MOVES heavy equipment; RESCUES mud-bogged equipment; INSURES against work stoppage or down-time on any project using equipment; PULLS the tractor itself out of mud or other situations that have immobilized the unit.

Hyster winches and other tractor tools are sold and serviced at more than 700 Caterpillar dealer stores around the world. Consult your dealer. Write for literature.

Hyster Tractor Winches are manufactured for use with Caterpillar D8, D7, D6, D4, D2 and DW10 tractors. Included are Towing Winches, Worm Drive Winches, Hy-Speed Winches, Oil Well Servicing Winches, two and three drum Tractor Mounted Hoists.

HYSTER COMPANY
2916 N. E. CLACKAMAS, PORTLAND 8, OREGON
1816 NORTH ADAMS STREET, PEORIA 1, ILLINOIS

If you write maker identify as IEN - 12615

If you write maker identify as IEN - 12616

GPX PLASTIC-FACED PLYWOOD
NOW IN FOUR VERSATILE GRADES

GPX's amazing versatility and outstanding performance has created over 60 proven cost-cutting industry uses . . . such as foundry match plates, photo lab equipment, testing tables, leather drying boards, and concrete forms.

GPX is available in four grades:
Concrete Form — General Use (Natural high resin)
Interior Paint Grade (White) — Exterior Paint Grade (Brown)

GPX is top grade solid core exterior Douglas Fir Plywood, surfaced with a layer of phenolic resin plastic under heat and pressure that makes the hard, dense plastic surface a part of the plywood itself.

CHECK THESE GPX PROPERTIES:
- ✓ WEATHERPROOF . . . unaffected by sun, rain or freezing.
- ✓ WATER RESISTANCE . . . 20 times more resistant to water absorption than ordinary plywood
- ✓ ABRASION RESISTANCE . . . 10 times as abrasion-resistant as ordinary plywood in dry state . . . 30 times when wet
- ✓ CHEMICAL RESISTANCE . . . resists hydrocarbons, alcohol, mild acids and soap liquor
- ✓ VERMIN RESISTANCE . . . impervious to termites, marine borers, mold and fungi; edge-sealed
- ✓ INCREASED DIMENSIONAL STABILITY . . . stronger than steel (weight for weight)
- ✓ EASY TO WORK . . . easy to saw, drill, sand, nail, rivet, glue or paint
- ✓ VARIETY OF GRADES AND WEIGHTS . . . comes in 4 grades, 5 thicknesses. Standard panel size 4 x 8 ft. Longer lengths on special order

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GEORGIA—PACIFIC PLYWOOD COMPANY
614-11A North Capitol Way, Olympia, Wash.
OFFICES OR WAREHOUSES IN: Augusta, Birmingham, Boston, Chicago, Cleveland, Columbia, Detroit, Houston, Lancaster, Los Angeles, Louisville, Memphis, Nashville, Newark, New Hyde Park, New Orleans, Olympia, Orlando, Philadelphia, Pittsburgh, Providence, Raleigh, Richmond, Savannah, Vineland

For complete data, fill in and mail this coupon today

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Plastic Plywood Division
Marsh Street
Port Newark 5, N. J.
Please send me the GPX Use Folder.
NAME
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FIRM ADDRESS
CITY STATE
POSITION

If you write maker identify as IEN - 12618

CONSTRUCTION . . Power excavator digs 6 in. trench to 42 in. in depth

Source: CHARLES MACHINE WORKS
623 Birch St., Perry, Oklahoma

Trench digging deluxe

Super E is a new size in the company's Ditch Witch line of engine driven wheel mounted excavators. It includes a chain type digging head supported by a hydraulic jack and pivoted arms so the digging blades can be raised or lowered for a desired trench depth. The engine is belt connected to the chain.

Material is brought up for discharge to one side or the other as the machine is moved forward, also by power supplied by the engine. The jack is raised and lowered by a hand lever near the operator's position. A handwheel connects to the steering mechanism.

If you write maker identify as IEN - 12619

DRYING . . Refrigerating unit to remove excess moisture from a room

Source: HALSEY W. TAYLOR CO.
1952 N. Park Ave., Warren, Ohio

Operates noiselessly

Capacity is about 8,000 cu. ft. of closed space for this new Air-O-Dryer. It plugs into a 110-volt 60-cycle ac. power source. It measures about 17 by 12 by 22 inches and weighs 60 pounds.

Moisture laden air is drawn in by a motor driven fan of permanently lubricated design. The moisture condenses out on a refrigerating coil served by a ⅛-hp. hermetically sealed motor driven compressor. A toggle switch, located on the side of the housing, controls both compressor and fan motors. Moisture drains from the coil for collection in a bucket to be emptied at intervals as it accumulates.

Identify as IEN - 12620

Soundstripe is a new sound-track striping service for silent motion-picture film by Bell & Howell. Silent film for all types of 16-mm. motion-picture cameras, both magazine and roll film, can be striped for magnetic sound. Cost is 3½ cents per film foot. The company also offers to supply its recently developed combination optical magnetic recording projector and, for about $35, it will factory adapt projectors previously sold to the new sound recording development.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12621

If you write maker identify as IEN - 12622

If you write maker identify as IEN - 12623

How do your aluminum castings rate on this quality

Check List

Freedom from Pinhole Porosity?
Is a casting from every heat checked for pinhole porosity? That's the practice at Acme.

Close Dimensional Tolerances?
Are your aluminum sand castings up to 1/64" accurate on small sizes, 1/32" on large? They are at Acme.

Freedom from Hidden Defects?
Are you machining your castings only to discover hidden defects? Foundry practice at Acme makes use of X-ray.

Accurate Mechanical Properties?
Are mechanical properties tested by an actual section from a casting? They are at Acme.

If you want to know more about Acme's remarkable facilities and Acme's 6-point laboratory control, write for latest bulletin. Requests for quotations given prompt attention.

Acme — TRIPLE Foundry Division
ALUMINUM ALLOYS, INC.
15 N. FINDLAY ST., DAYTON, OHIO

If you write maker identify as IEN - 12624

Other Bil-Jax profit-makers include tower scaffolding, swing scaffolds, sidewalk bridges, ladder jacks, steel ladders . . . all of simple, sturdy design to give a lifetime of service, safety and satisfaction. Rent or buy. Distributors in principal cities.

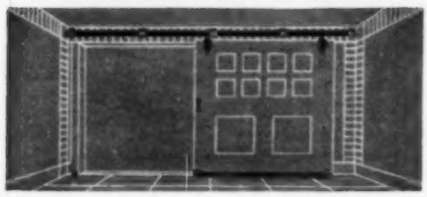
Write for complete catalog. Address Dept. L-11

BIL-JAX, INC., Archbold, Ohio, U. S. A.

If you write maker identify as IEN - 12625

COBURN

SLIDING DOOR HARDWARE



. . . LOW INSTALLATION COST
. . . SMOOTH, EASY OPERATION
. . . LONG, TROUBLE-FREE LIFE
. . . ADAPTABLE FOR BOTH NEW AND REMODELING JOBS

Sliding door hardware for industrial applications of all types: Straight-sliding, sliding-folding, around-the-corner, roundhouse and fire doors.

For additional information write to Sales & Engineering, 56 Sterling St., Clinton, Mass. or consult your classified telephone directory.

THE COLORADO FUEL & IRON CORPORATION—Denver, Colorado
THE CALIFORNIA WIRE CLOTH CORPORATION—Oakland, California
WICKWIRE SPENCER STEEL DIVISION—Clinton, Massachusetts

COBURN PRODUCTS
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL & IRON CORPORATION
CFI

If you write maker identify as IEN - 12626

MAKE THIS FREE TEST
and discover for yourself there's no better direct positive print paper

DIETZGEN
DIRECTO
T. M. REG. U. S. PAT. OFF.

NOW you can have longer-lasting direct prints that fairly sparkle with contrast

You get blacker-than-ever lines on whiter-than-ever backgrounds with DIRECTO, the new, improved Dietzgen semi-dry process that gives you ready-to-use direct positive prints in seconds. DIRECTO prints fight wear and tear, and even when oil-soaked, grime-smeared, sweat-stained they retain amazing legibility.

You are assured of uniformity because DIRECTO developing solution is chemically stable, always brings out strong black images, whether mixed fresh or old. And there's no washing, no lengthy drying, no negative needed. DIRECTO prints are made direct from your translucent original.

Compare this remarkable material with any other you have ever used. DIRECTO is available now with blue, pink, yellow and green backgrounds, as well as white, for convenient color coding. Send for samples.

EUGENE DIETZGEN CO. • Chicago • New York • San Francisco
New Orleans • Los Angeles • Pittsburgh • Washington
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DIETZGEN
EVERYTHING FOR DRAFTING SURVEYING & REPRODUCING

Free Samples!

If you write maker identify as IEN - 12628

COUNTING . . Electronic equipment reads in terms of events per second

Source: BERKELEY SCIENTIFIC DIVISION
2202 Wright Ave., Richmond, Calif.

List is $560

A time base is combined with an electronic counter in this new Model-556 Events-Per-Unit-Time meter. An unknown repetition rate can be read directly in events per second. Counting rate is from 20 to 100,000 in this time interval. Each count is presented in direct decimal form by four decades. Display time is variable from 1 to 5 seconds. The time base can be set at 0.1 or 1 second.

Operation is on 110-volt 60-cycle ac. Actuation is by optical, physical or electrical means. The unit is assembled in the housing measuring about 16½ by 13 by 10¼ inches. Weight of the new unit is about 35 pounds.

If you write maker identify as IEN - 12629

LUBRICATING . . Graphite in liquid to form dry film on metal surfaces

Source: ELECTROFILM CORP.
7114-18 Laurel Canyon Blvd., North Hollywood, Calif.

One quart to brush lists at $8

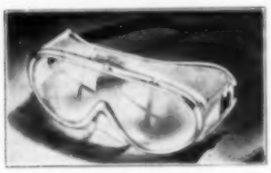
Lubond trade names a new development in the company's graphiting process, previously described IEN-8415-49, in which graphite in a liquid carrier is sprayed or brushed on a metal surface. The liquid evaporates to lubricate wearing surfaces in a temperature range between minus 70 and plus 300 deg. F.

Application includes hinge pins, hydraulic cylinders, gears, machine and pipe threads, valves, tracks, springs, floats, fastenings, actuator screws. Packaging is in half pints to gallons.

If you write maker identify as IEN - 12630

PROTECTING . . Plastic goggle stops chips, metal spatter, splash

Source: UNITED STATES SAFETY SERVICE CO.
1213-17 McGee St., Kansas City 6, Mo.



Weighs 1.7 ounces

Vinylite plastic frame in this new Saf-I-Flex goggle is fitted with rolled edges and with grid ventilation for user comfort and to keep the lenses fog free. The transparent plastic permits side vision. The lens locks into the frame channel for quick replacement. The goggle will fit over prescription glasses. It is held in place by a flexible headband. Impact resistance is excellent.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12631

MORSE
"ROCK-A-DRUM" VERTICAL TRUCK
WHEELS TO ANY LOCATION!

Specially engineered for use with drums which can be drained only in a vertical position. The Morse Truck is easily rocked into dispensing position by one man. The weight of the load is evenly distributed over the four wheels and adequate clearance is provided under pouring spout.

Write for Bulletin 949

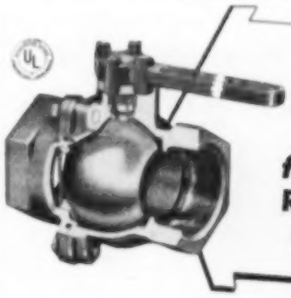
MORSE MANUFACTURING CO. INC.
133 Dickerson Street Syracuse 2, N. Y.

If you write maker identify as IEN - 12632

SYLPHON No. 7 Unit Heater Control—for unit heaters, wall or ceiling type radiators, or finned tube heating. Automatically maintains healthful, comfortable temperature in offices or plants. Highly sensitive . . . fully modulating . . . self-contained . . . self-powered. Thermostat unit can be installed at best point on wall or column for regulating area temperature. Sturdy and compact. Pays for itself in benefits gained and fuel saved. Write for Catalog VN-250.

FULTON SYLPHON
DIVISION
ROBERTSHAW-FULTON CONTROLS CO. • • KNOXVILLE 4, TENN.
Temperature Controls • Bellows Devices • Bellows Assemblies
Canadian Representative, Darling Brothers, Montreal

If you write maker identify as IEN - 12633



Just a quarter turn for FULL ROUND FLOW

Dependability and efficiency are the reasons why Rockwood Ball Valves are in a class by themselves.

A quarter turn opens the ball valve for full, *round* flow — liquids follow the natural course of flow without halt or turbulence. Another quarter turn and the floating bronze ball, combined with the synthetic rubber seat, forms a leakproof seal. Chrome-plating of bronze ball prevents scratching, pitting and abrasion.

For use in oil refineries, food, textile, chemical and rubber plants, etc. Tested by Underwriters' Laboratories, Inc. For further details, send for free Bulletin V-4. Rockwood Sprinkler Company, 40 Harlow Street, Worcester 5, Mass. Distributors in all principal cities.

ROCKWOOD BALL VALVES
THE FLOW IS AS ROUND AS THE PIPE ITSELF

If you write maker identify as IEN - 12634

inexpensive MECHANICAL MUSCLES
for your Light Duty Lifting

SERVICE Battery Powered JUNIOR LIFTERS

For loads too heavy for a man, too light for expensive, heavy-duty lifting equipment.

Service Battery-Powered JUNIOR LIFTERS easily, quickly and safely handle those light-duty lifting jobs—avoiding tie-up of your expensive, heavy lifting equipment. Ideal for receiving, shipping, storage and intra-plant materials handling.

Rate of lift 15 feet per min. Standard dimensions*: lift 4'8"; platform size 50" x 50" square; capacity 500 lbs.; overall height 6'0". *Write today for circular No. 450.*

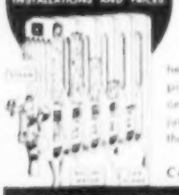
*Other dimensions supplied on special order. Electric-Hydraulic Powered, Hand-Hydraulic and Crank-up, Crank-down Junior Lifters also available.

Battery Powered JUNIOR LIFTER is fool operating . . . can be used anywhere. Note how easily one man controls operations.

SERVICE CASTER & TRUCK CORP.
Executive Offices, Albion, Michigan
Plants at Albion, Michigan & Somerville 43, Mass.
See your Classified Telephone Directory for Nearest Distributor

If you write make identify as IEN - 12635

SEND FOR COMPLETE INFORMATION, INCLUDING OPERATING PRINCIPLES, INSTALLATION DATA, TYPICAL INSTALLATIONS AND PRICES



STEAM HEAT! WHERE YOU WANT IT! WHEN YOU WANT IT!

Why should your office employees suffer with the cold this winter—when it's so easy to keep them warm and comfortable with Clow Gasteam Radiators. Quick steam heat! Fingertip control! No hot water pipes, boiler or furnace room to rely on! Inexpensive, because you heat just the area where it's needed—not the whole plant!

Available for City, Butane or Propane Gas

JAMES B. CLOW & SONS
701-799 N. Talman Ave., Chicago 80, Ill.

If you write make identify as IEN - 12636

Here's Efficient, Dependable Air Supply

JOY WL-80
"UNITAIR" COMPRESSOR

- ★ A size for every standard motor rating
- ★ Force-feed lubrication
- ★ Small floor-space requirements
- ★ 81 to 640 CFM
- ★ Two Stage ... Air cooled

And here's FREE HELP!

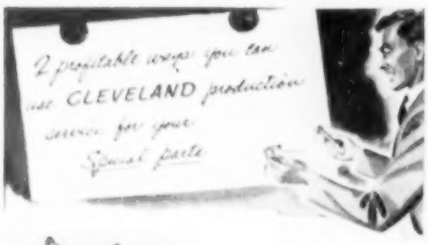
Bulletin A-56 ... new, with 16 fact-filled pages and a Selector Chart. Write for it to select the right compressor for your needs.

Consult a Joy Engineer

W-8-13086

JOY MANUFACTURING CO.
General Offices: Henry W. Oliver Building
Pittsburgh 22, Pa.
IN CANADA: JOY MANUFACTURING CO. (CANADA) LIMITED
GALT, ONTARIO

If you write make identify as IEN - 12637



Your non-standard parts manufactured complete by the Kaufman Double Extrusion Process—a tougher product, produced with accuracy of dimensional detail—ready for your assembly line.

OR—

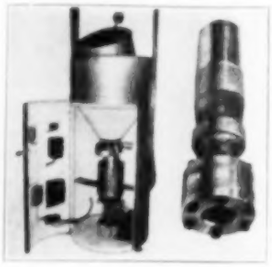
parts pre-formed by forging—ready for further shaping and machining in your plant. Here's economy over an all-machined part, and extra strength gained through Kaufman Process forging. Write for bulletin "Specials by Specialists."

CLEVELAND *Top Quality* **FASTENERS**
The Cleveland Cap Screw Company
2917 East 79th Street Cleveland 4, Ohio
Warehouses: Chicago, Philadelphia, New York, Providence
ASK YOUR JOBBER FOR CLEVELAND FASTENERS

If you write make identify as IEN - 12638

HEATING . . Chemical feeder and injector to promote combustion

Source: OXI-KOR CORP.
9th & Thomas Sts., Gary, Ind.



Company guarantees results

The company announces development of new conditioning and feeding equipment with a steam operated injector nozzle to deliver oxygen liberating chemical and air, drawn from the outside, into the combustion area above the fuel bed in a boiler furnace. The chemical is stored in a hopper that has capacity to hold 200 lb. above the feeder.

The chemical feeds downward into the conditioner housing from where it is picked up by suction induced at the injector nozzle to be mixed with intake air at the nozzle for delivery into the fire box. The air and liberated oxygen combine to promote complete combustion prior to entry of the gases into the boiler tubes for efficient operation and to minimize smoke. The granular chemical is known as Oxi. The feeder equipment is the conditioner and the injection nozzle is the Vac-U-Turbulator.

If you write make identify as IEN - 12639

PHOTOGRAPHING . . Flash tube actuated by discharge from condenser

Source: AMERICAN SPEEDLIGHT CORP.
480 Lexington Ave., Room 514, New York 17, N. Y.

Midget 100-I is a new assembly of reflector-equipped flash tube operated by condenser discharge from a power unit measuring 7½ by 3 by 8 inches. Weight of the power unit with the battery is 6½ pounds. Connection can be made to an ac power source in place of the battery. The reflector provides light spread of about 65 degrees.

If you write make identify as IEN - 12640

Samples are processed and pilot production runs are made in the new Ipsen Industries laboratory in Rockford, Ill. Equipment is installed for bright hardening, annealing, carburizing, carbo-nitriding, tempering and controlled-oxygen tempering. A metallurgical laboratory section and a small machine shop are included in the new layout. Atmosphere generators are available to produce endothermic, exothermic and dissociated ammonia composition gases.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write make identify as IEN - 12641

for low cost metal grinding

Because Jewelox Fibre Backed Discs grind better, last longer — they reduce grinding costs to a minimum. Jewelox Fibre Backed Discs will not curl or warp and resin bonding gives them outstanding durability.

Test Jewelox Fibre Backed Discs yourself. Prove to your own satisfaction that they are tops for use on high speed pneumatic or electric grinders. Order Jewelox Fibre Backed Discs from your distributor or write Abrasive Products, Inc., 541 Pearl St., South Braintree 85, Mass.

SHARPER, TOUGHER

Jewel COATED Abrasives

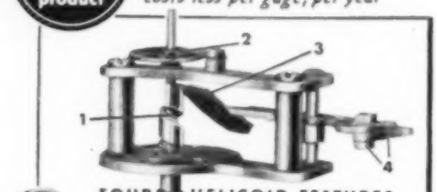
CUT COSTS!

If you write make identify as IEN - 12642

an ACCO product

HELICOID

The gage that retains its original accuracy longer, lasts longer, costs less per gage, per year



FOUR HELICOID FEATURES

1. Stainless Steel Helicoid Roller (no gear teeth)
2. Stainless steel hair spring
3. Long life Cam (no gear teeth)
4. Corrosion-resistant link and screws

• HELICOID GAGES, which do not have gear teeth to wear out, are made in a full range of pressures . . . in various sizes and shapes, with black, white and phosphorescent faces. For wall or stem mounting, flush or panel mounting, or flangeless. No finer gages are made. Helicoid Gages cost less in the long run.

Write today for the Helicoid Gage catalog

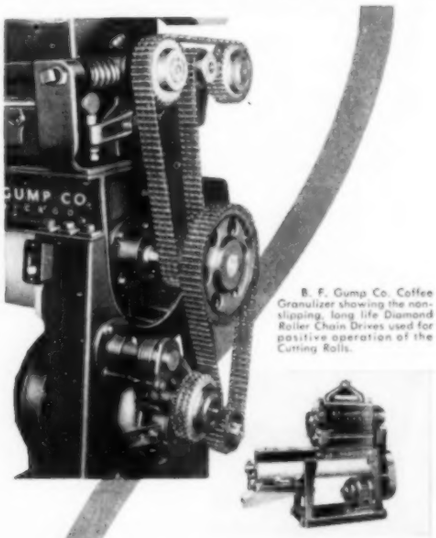
ACCO

HELICOID GAGE DIVISION
AMERICAN CHAIN & CABLE
929 Connecticut Avenue • Bridgeport 2, Connecticut

HELICOID *Pressure* • *Vacuum* **GAGES**

If you write make identify as IEN - 12643

FOR POSITIVE PRODUCT CONTROL



B. F. Gump Co. Coffee Granulizer showing the non-slipping, long life Diamond Roller Chain Drives used for positive operation of the Cutting Rolls.

DIAMOND ROLLER CHAINS

Diamond Roller Chains provide "quiet-running positive drives that revolve the Cutting Rolls toward each other at the proper differential speeds. These modern drives result in worthwhile savings in maintenance and operation".

Diamond Chains eliminate troublesome, heavy gear trains. They provide positive, non-slip operation of a number of shafts rotating in the same or opposite directions and at the same or different speeds. Shaft center distances and speed ratios make no difference. The drive is as positive as gears — without the weight, the number of bearings needed, the lubrication problems, or the separating forces.

Diamond Roller Chains can help you solve your toughest drive problems. Investigate now. There is no obligation.

DIAMOND CHAIN COMPANY, Inc.
Dept. 465, 402 Kentucky Avenue,
Indianapolis 7, Indiana
Offices and Distributors in All Principal Cities
Refer to the classified section of your local telephone directory under the heading CHAINS or CHAINS-ROLLER

DIAMOND **ROLLER CHAINS**

If you write maker identify as IEN - 12645

"magic hand"

THE NEW IDEA IN VACUUM BLANKET PHOTOCOPY PRINTERS

A rubber vacuum blanket of new design suspended from a light, internally counterbalanced lid is the feature of the Peerless "Magic Hand" Printer.

Advantages are:

- EASY MULTI-PRINT OPERATION
- CLOSE, QUICK CONTACT
- LESS OPERATOR FATIGUE
- UNIFORM ILLUMINATION

PEERLESS

Write today for free leaflet MH-1

PEERLESS PHOTO PRODUCTS, INC., SHOREHAM, L. I., N. Y.

Distributors in: Los Angeles, Chicago, Cleveland, Detroit, Pittsburgh, Buffalo, Tulsa, Dallas, Houston, Salt Lake City, Atlanta

If you write maker identify as IEN - 12646

Control Temperatures More Closely

REDUCE COST • SAVE TIME

This Catalog of Improved Pyrometer Supplies shows you how!

Get your FREE Copy Today!

- ★ Thermocouples
- ★ Thermocouple Wire
- ★ Insulators
- ★ Protection Tubes
- ★ Lead Wire
- ★ Terminal Heads

ARKLAY S. RICHARDS CO., Inc.
NEWTON HIGHLANDS 61, MASS.

If you write maker identify as IEN - 12647

Compact - Powerful. Versatility

The New 50 oz. BIG BULLY AIR HAMMER

On foundry and metal working operations too heavy for the Bantam Bully use the new Big Bully. It offers you compactness plus the powerful results necessary on difficult foundry chipping, heavy weld scaling, chiseling and routing, gouging and grooving, cutting and star drilling and many other tough jobs.

The Big Bully is a precision tool 6" long, delivering 9000 sharp blows per second from 6.5 C.F.M. of air. Its exclusive trigger metering control provides complete regulation from a feather weight touch to a hard blow.

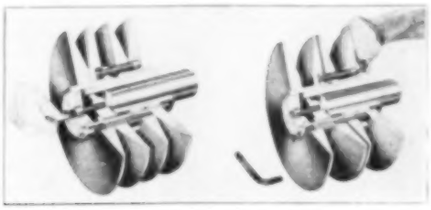
Write today for full details on the Big Bully, Bantam Bully, Bully Blow Gun and the Bully Fulflo Air Filter.

SUPERIOR PNEUMATIC & MFG. CO.
4758 WARNER RD. • CLEVELAND 25, OHIO

If you write maker identify as IEN - 12648

DRIVE . . Adjustable pitch sheave, belts, machine sheave and slide base

Source: DODGE MFG. CORP.
500 S. William St., Mishawaka, Ind.



Illustrated specifications in Bulletin A-618

Machine speed can be changed and secured in stepless progression by turning an adjusting screw in the side of the new Type-VR sheave and by adjusting the motor base to set correct belt tension in this new adjustable speed drive. The Type-VR sheave is adjustable for pitch diameter between 5.5 and 10 inches. The companion non adjustable sheave, which also is supplied with the belts as a part of the complete drive, is available in 10 to 20-in. pitch diameter in ten steps. Two or three Type-R belts are included for ratings from 5 to 20 hp. and for motor speeds of 1,750, 1,160 or 870 rpm.

The drive is characterized by its use of the company's previously developed Taper Lock hub design for sheaves and pulleys. The hub is mounted on a pair of tapered split sleeves bearing on the straight shaft and straight hub bore respectively. The sheave is tightened in desired position by turning a single screw to draw the tapered sleeves together, compressing one and expanding the other. Reversing the screw draws the sleeves apart for release to change or reposition.

If you write maker identify as IEN - 12649

TESTING . . Ohmmeter to test insulation, 110 volt ac. input

Source: HERMAN H. STICHT CO.
24 Murray St., New York 7, N. Y.

Ask for Bulletin 461

Model P-1 is a new assembly in the company's line of testing equipment for electrical insulation. It is intended for production use and can be applied portably or on a bench. The self-contained power unit steps up and rectifies 110-volt 60-cycle ac. input to provide dc output at 500 or 1,000 volts. Single range and double range assemblies provide overall scale movements of 100, 1,000 or 2,000 megohms. The mirror scale measures 5 in. in length.

A guard circuit is included to prevent error due to leakage.

The mechanism includes a current coil and a potential coil mounted in fixed relation to each other. These are energized when potential is applied to the movement. When the instrument is not in operation the pointer is not fixed and floats toward infinity. The construction protects the user against any danger of shock. Overall dimensions, with the lid closed, are about 8 by 9 by 7 inches. Weight is about 10 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12650

JABSCO SELF PRIMING PUMPS

Patented and Patents Pending

the pump with the DUPONT NEOPRENE impeller (oil resistant)

BRONZE, STAINLESS STEEL & IRON CONSTRUCTION —CAPACITY TO 50 GALLONS PER MINUTE

1. MORE CAPACITY—for its weight, size and price.
2. SELF-PRIMING—starts instantly with high suction lift.
3. ONE MOVING PART—tough, long-lived.
4. GEARLESS—impeller outlasts metal gears.
5. TROUBLE FREE—simple construction.
6. ECONOMICAL—low cost—low maintenance.

LIQUID TRANSFER AND CIRCULATING FOR ALL INDUSTRIES

JABSCO PUMP COMPANY
2031 N. Lincoln Street • Burbank, California

If you write maker identify as IEN - 12651

MORE PRODUCTION Per Worker With Wayne Industrial Hose Reel

AIR SUPPLY AND TOOL SUSPENSION COMBINED IN EASILY-MOUNTED REEL

Wayne Industrial Hose Reels can boost job output, help reduce assembly costs and lessen worker fatigue on some jobs. Air supply and tool suspension are combined to give greater working radius, and "open" air supply for tools.

Air tool is within easy reach at all times. No cables to dangerous loops of hose to cause accidents. Hose is completely protected on Reel when not in use.

Spring tension of Reel counterbalances air tool. Rancher holds hose at any desired length, until released by a short fast reel pull. Then hose automatically rewinds on the Reel. Automatic locking prevents whipping or lashing action. Reel can be mounted in many convenient positions.

Find out how Wayne Industrial Hose Reels will fit into your production picture profitably.

THE WAYNE PUMP COMPANY
SALISBURY, MARYLAND

Wayne
NATION WIDE SERVICE

INDUSTRIAL HOSE REELS
FOR AIR, WATER, FLUID LUBRICANTS AND COOLANTS

If you write maker identify as IEN - 12652

RECOVERED 3 TIMES IT'S COST IN 2 YEARS' USE. NO REPAIRS OR REPLACEMENTS *

*Unsolicited statement made by a Michigan User about a Titan Electric Hoist

THE TITAN ELECTRIC HOIST

Material handled overhead saves valuable floor space for production.

The *Titan* is the powerful, *little* hoist with the *big* hoist features: Improved Worm Drive, Electric Brake, Push-Button Control.

Once tried, it is the preferred small hoist.

Capacities: 250 lbs. to 1 ton; with monorail trolley or upper suspension hook.

Write for Titan Bulletin 801A.

DETROIT HOIST & MACHINE CO.
8226 Morrow St., Detroit 11, Mich.
Manufacturers Since 1905

If you write maker identify as IEN - 12653

Another **FIRST by ARO**

Instant PUSH-BUTTON Reverse

A REVOLUTIONARY SCREW DRIVER AND NUT SETTER

ARO's new push-button valve means *instant reverse action* . . . no need to remove from work . . . no stopping to turn levers . . . no wasted time.

Adjustable clutch (available with positive clutch) Length 7-11/16" . . . outside diameter 1-5/16" . . . weight 1.4 lb.

This outstanding tool must be seen in action to appreciate its amazing action. Write for literature.

The Aro Equipment Corporation, Bryan, Ohio.
Aro Equipment of Canada, Ltd., Toronto

ARO AIR TOOLS Also . . . LUBRICATING EQUIPMENT . . . HYDRAULIC EQUIPMENT . . . AIRCRAFT PRODUCTS . . . GREASE FITTINGS

If you write maker identify as IEN - 12654

New Flexible Sealing T-J AIR CYLINDER

Designed with revolutionary application of Super-Cushion

It's sealed with pressure—insures positive cushion action combined with automatic valving action for fast return stroke . . . eliminates binding and sticking . . . operates with *low friction, minimum wear,* and *added power* due to higher efficiency. Many more plus features! Wide range of styles and capacities. Write for bulletin 252. The Tomkins-Johnson Co., Jackson, Mich.

36 YEARS' EXPERIENCE

TOMKINS-JOHNSON

If you write maker identify as IEN - 12655

SPEED REDUCTION IS OUR SPECIALTY

Abart

BUILDERS OF SPEED REDUCERS FOR ALL INDUSTRIAL PURPOSES

Years of specialized engineering design and experience are embodied in the thoroughly comprehensive line of spur, worm, and combination speed reducers offered by Abart. Whatever your particular application, there is an Abart Speed Reducer exactly suited to the job. Oil-tight and sealed against dust, they are compact, quiet, power conserving, and exceptionally durable. Horsepower ratings range from 1/50 to 168, ratios to 10,000 to 1.

SEND FOR POCKET-SIZE CATALOG containing complete data on ABART SPEED REDUCERS and GEARMOTORS

SPUR GEAR DRIVES
WORM GEAR DRIVES
and COMBINATIONS

Abart GEAR & MACHINE CO.

4023 WEST 16th STREET • CHICAGO 50, ILLINOIS

Mfrs. of Gears, Speed Reducers and Gearmotors

If you write maker identify as IEN - 12656

IT'S ALLIED FOR RCA

Authorized RCA Distributor

ELECTRON TUBES FOR INDUSTRY

Quick, Expert Service
ALLIED stocks for quick shipment, the world's largest distributor inventory of RCA special-purpose tubes. We specialize in supplying the needs of industrial, broadcast, governmental and other users. To save time, effort and money—phone, wire or write to ALLIED for quick shipment. Fill all your electronic needs from one complete source.

ALL TUBE TYPES IN STOCK

- Vacuum Power
- Thyratrons
- Vacuum & Gas Rect.
- Ignitrons
- Cold-Cathode
- Phototubes
- CR Tubes
- Camera Tubes
- Monoscopes
- Special Types

FREE Interchangeability Directory

Valuable guide to selection of proper RCA tube type replacements. Lists 1600 tube types. Write for Free RCA Guide No. 37-040.

1953 ALLIED CATALOG

Refer to your ALLIED Catalog for all electronic supplies. Write today for FREE copy of the complete 236-page 1953 ALLIED Catalog.

Everything in Electronics
FROM ONE RELIABLE SOURCE

ALLIED RADIO

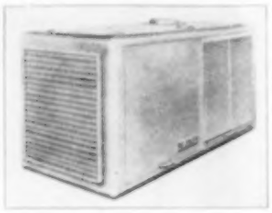
833 W. Jackson Blvd., Dept. 14-L-2
Chicago 7, Ill.

FREE!—Send for it today!

If you write maker identify as IEN - 12657

HEATING . . Gas fired space unit, self contained assembly, 80,000 btu.

Source: REZNOR MFG. CO.
200 James St., Mercer, Penna.



Ask for Bulletin GNP-52-4

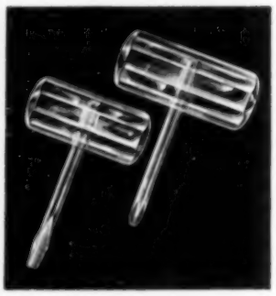
Multiple burners fire into the bottoms of a bank of vertical steel tubes in this new PAC central unit heater. Products of combustion move upward through the tubes and are exhausted at a flue connection in the top or in the side near the top. Air is drawn in by a motor driven blower through a filter at one end. It is passed between the tubes where it picks up heat for delivery at a lower panel at the opposite end.

Air rating is 1,620 cfm. for a 45 deg. temperature rise at zero static pressure. It is 650 cfm. for a 115 deg. temperature rise at 0.375 in. of static pressure. The ¼-hp. motor is fitted with an adjustable pitch sheave for connection by a V-belt to the blower. Dimensions are about 48 by 22 by 23 inches.

If you write maker identify as IEN - 12658

SCREW DRIVING . . T-handle tool for slotted and Phillips head screws

Source: HERBRAND DIVISION
1009-13 Stone St., Fremont, Ohio



Multigrip trade names a new T-handle screw driver in which a 2½-in. steel shank is molded into a plastic handle set crossways rather than in line with the shank. The design permits a firm grip on the handle and leverage sufficient to loosen tight screws. The tool is available in two sizes each, for Phillips screws and for slotted screws.

Identify as IEN - 12659

The art of arc welding, under all conditions and for every purpose in which this operation can be employed to join or process metals, is the specialized interest of Lincoln Electric Company's school of welding. The company has been operating this school for 35 years. It has 35,000 men and women graduates. It starts a new four-week course each week at the Cleveland plant. Cost is nominal. Profit to you could be considerable were you to go or send one or more of your welding men. A new bulletin, "Building Your Career in Welding", has been published and is available on request.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12660

ALUMINUM LOUISVILLE

STAGES *20 Inches Wide*
PLANKS *12 Inches Wide*

Light weight durable Contractor's Equipment designed for heavy duty service. Made of extruded aluminum rails and rungs securely riveted with the Louisville Safe Weight method for strength and serviceability. Aluminum channel decking ensures light weight — knurled surface provides sure footing.

ALSO COMPLETE LINE OF LADDERS
SEE YOUR DEALER OR WRITE US

LOUISVILLE LADDER COMPANY
1101 W. Oak St. — Dept. 2A — Louisville 10, Ky.

If you write maker identify as IEN - 12661

EASY-WELDING THE PROBLEM METALS

ALUMINUM
STAINLESS STEELS
NICKEL ALLOYS

Here's the story of Heliwelding — Airco's inert-gas arc-welding process. Its special characteristics — freedom from oxidation — pin-point heat concentration — give it a definite role in the family of arc welding methods.

When you're faced with welding thin sections of the problem metals — stainless steel, aluminum, brass, copper, everdur, nickel, inconel, or monel, it will pay to know all about Airco's Heliwelding Process.

To get your copy of Catalog 9, Heliwelding, just write in today on your letterhead. Address: Advertising Department, Air Reduction Sales Company, 60 East 42nd Street, New York 17, N. Y.

AT THE FRONTIERS OF PROGRESS YOU'LL FIND AIR REDUCTION PRODUCT

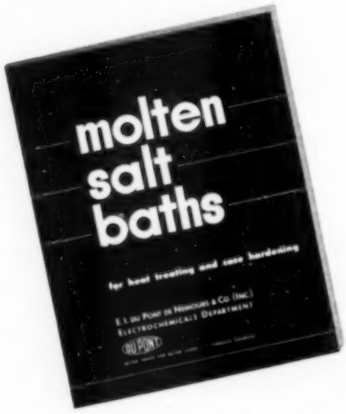
AIR REDUCTION

AIRCO

AIR REDUCTION SALES COMPANY • AIR REDUCTION MAGNOLIA COMPANY
AIR REDUCTION PACIFIC COMPANY
REPRESENTED INTERNATIONALLY BY AIRCO INTERNATIONAL
Divisions of Air Reduction Company, Incorporated
Dealers and Offices in Principal Cities

If you write maker identify as IEN - 12662

NOW... complete information on case hardening and heat treating salt baths



You'll find all these features in this new 75-page Du Pont manual:

- **Complete descriptions** of salt baths for cyaniding, carburizing, heat treating and quenching.
- **Detailed information** on salt baths for special applications—cyanide reheating and nitriding, hydride descaling and heat coloring.
- **Data on how** salt baths are prepared and controlled . . . results that can be produced . . . charts and photomicrographs showing the heat treating and case hardening properties of S.A.E. steels.
- **Tables of** salt bath formulations and replenishment equivalents.

FROM COVER TO COVER *this new manual is packed with information for all types of metal processors. Be sure there's a copy in your file for reference.*

MAIL THE READER SERVICE COUPON FOR YOUR COPY

DU PONT CYANIDES AND SALTS for METAL TREATING

DU PONT

150th Anniversary

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

If you write maker identify as IEN - 12664

You wouldn't intentionally slow down your production lines with inefficient tools or use the wrong machine for the job at hand. Isn't it equally logical to make sure that every fastening job is done with a fastener that is "just right"?

Differences in hardness and thickness of the tapped material require selection of the right type of tapping screw thread. This, in turn, works best with selection of the right hole size.

Lamson fastener engineers can advise you how to reduce the variety of fasteners and sizes at each assembly station, cut costs and improve assembly. Lamson control of quality and Lamson design produce low drive torques—high strip torques. Solve your fastening problems with Lamson Tapping Screws.

...specify Lamson tapping screws

Lamson & Sessions

The LAMSON & SESSIONS Co.
1971 West 85th St. • Cleveland 2, Ohio
CLEVELAND and KENT, OHIO • BIRMINGHAM • CHICAGO

If you write maker identify as IEN - 12665

Do You Know

why electricians and plant men like

National Electric 4x4 Wirewā?

"Our wiring system has to be changed, tapped, spliced frequently. No other wiring system gives us the *accessibility* and the *steel protection* of NE Wirewā."

"I can assemble sections of NE Wirewā on the floor where it's easy to work. Then it's no job to lift into place—either directly to the wall or suspended from the ceiling."

"Where taps or splices are to be made inside the wireway, accessible *hinged covers* must be employed as required by Art. 362, Par. 3625 of the N.E. Code. National Electric 4x4 Wirewā meets this vital requirement."

"Wirewā is roomy—16 sq. in. Eliminates numerous conduit runs. And it's economical, too. Easy to reroute and extend—100% salvable."

Listed by Underwriters' Laboratories, Inc.

Write for details

EVERYTHING IN WIRING POINTS TO

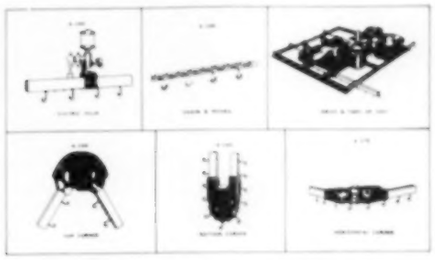
National Electric Products

PITTSBURGH, PA.
3 Plants • 7 Warehouses • 42 Sales Offices

If you write maker identify as IEN - 12667

CONVEYING . . Link chain design with track, turn fittings and drive

Source: CHAIN-O-FLEX CORP.
3332-36 Lincoln, Franklin Park, Ill.



Illustrated description in Bulletin COF-251

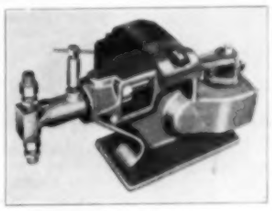
Link chain equipped with load carrying hooks on minimum 12-in. centers rides in an inverted U-type enclosing track that assemblies in straight runs in combination with ball bearing wheel-equipped turn fittings to change both horizontal and vertical direction in this overhead chain conveyor. The company announces purchase of the equipment, previously described IEN-2581-49, and present availability for load handling in which individual loads to 50 lb. can be suspended from the hooks.

Equipment includes a motor drive unit through which the chain rides. A variable pitch sheave in the drive connection permits speed adjustment in a ratio maximum at 3 to 1.

If you write maker identify as IEN - 12668

FEEDING . . Proportioning pump meters liquids into process lines

Source: PROPORTIONEERS INC.
384 Harris Ave., Providence 1, R. I.



Ask for Bulletin 1105

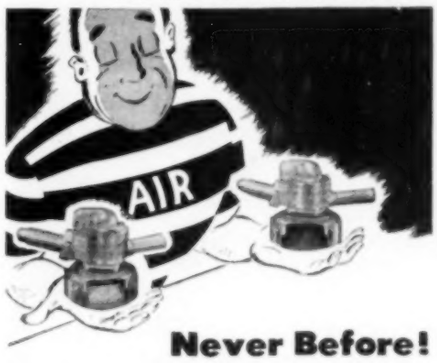
Model X-52 is a new unit in the company's Adjust-O-Feeder line of proportioning pumps. Capacity ranges from 1 to 10 gph. on discharge to 650 pounds. The pump also is available in a range from 0.5 to 5 gph. by specifying a different worm and gear assembly to operate at 43 rather than at 86 strokes per minute. Plunger diameter measures ⅝ inch. Stroke length is 1½ in. maximum. Adjustment is made by varying the crank throw.

The plunger is made of stainless steel and operates in a cast iron cylinder with outside end packed stuffing box and ball check valves. The check valves are vertical type with steel bodies and stainless steel balls. Pipe size is ⅜ inch.

Drive is by a ¼ hp. motor operating on 110 or 220-volt 60-cycle ac. A drip proof motor is standard in the assembly. The new pump is particularly suited to feed water treating liquid into a boiler water feed line. Overall dimensions are about 18 by 12 by 43 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12669



Never Before!

. . . SO MUCH POWER PER POUND

MEET the new Rotor Vertical Air Grinders! Never before have you had so much power in vertical air grinders . . . for such light weight! They're well balanced . . . easy on the operator. Here are *new* features to speed up your metal removal. *Write today for Bulletin No. 40.*

AIR O'TOOL

THE ROTOR TOOL CO.
CLEVELAND, OHIO

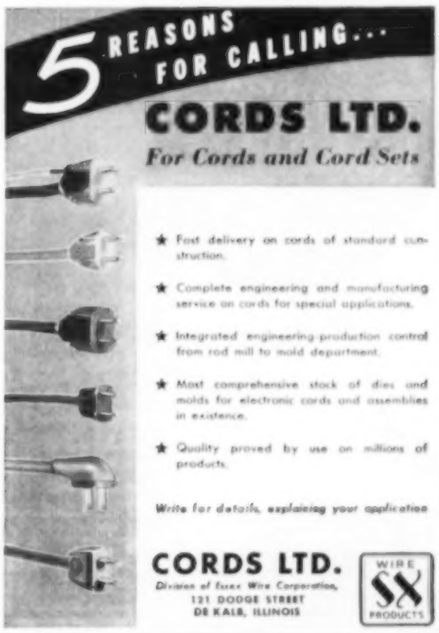
If you write maker identify as IEN - 12670

HOW TO IMPROVE YOUR PRODUCTS AT LOW COST

PERMACLAD
STAINLESS CLAD STEEL
ALAN WOOD STEEL COMPANY
CONSHOHOCKEN, PA.
Over 115 Years of Iron and Steel Making Experience

Other Products: A.W. ALGRIP Abrasive Floor Plate • A.W. SUPER-DIAMOND Floor Plate • Plates • Sheets • Strip • (Alloy and Special Grades)

If you write maker identify as IEN - 12671



★ Fast delivery on cords of standard construction.

★ Complete engineering and manufacturing service on cords for special applications.

★ Integrated engineering-production control from rod mill to mold department.

★ Most comprehensive stock of dies and molds for electronic cords and assemblies in existence.

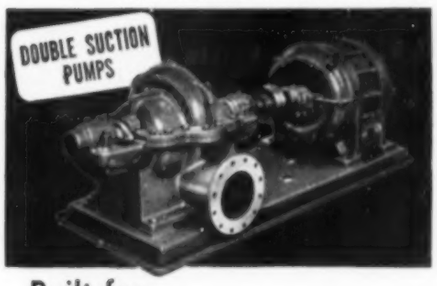
★ Quality proved by use on millions of products.

Write for details, explaining your application

CORDS LTD.
Division of Essex Wire Corporation,
121 DODGE STREET
DE KALB, ILLINOIS

WIRE S&S PRODUCTS

If you write maker identify as IEN - 12672



Built for LOW MAINTENANCE

GENEROUS CONSTRUCTION with extra metal thicknesses, extra strong parts, extra construction features and extra careful workmanship means lower pumping costs for you. Every pump tested on most modern equipment in industry. Each installation individually engineered.

Horizontally split casing, ball bearings, balanced impeller, wearing rings, hand finished water passages, cast shaft sleeves, generous stuffing box length. Choice of iron, bronze, stainless steel.

Standard sizes from 10 to 7000 gpm with 475 foot head. Larger sizes available. For complete information, call your Allis-Chalmers Office, or write Allis-Chalmers, Milwaukee 1, Wisconsin for bulletin 08B6146.

A-3520

ALLIS-CHALMERS

If you write maker identify as IEN - 12673

operating pressures recommended up to 1500 p.s.i.

CATALOG H-7 AVAILABLE ON REQUEST

"COMMERCIAL"
THE COMMERCIAL SHEARING AND STAMPING COMPANY
1775 LOGAN AVE. YOUNGSTOWN 1, OHIO

If you write maker identify as IEN - 12674

BETTER SEEING TOOLS FOR INDUSTRY

FOSTORIA LOCALITES INCREASE WORKERS' EFFICIENCY

Light the Vital Seeing Zone on Machine Tools, Inspection and Assembly Benches

MODEL 3267-H-174

$6.12 EACH in pkg. of 6. Single Units $7.65 ea.

Overall length 32½". Three instantly adjustable joints. Flat oblong base for machine screw mounting.

- **Rugged Construction** withstands vibration and rough handling
- **Instantly Adjustable** with flexible ball and socket joints
- **Baked Enamel Finish** — Exterior, Smooth Gray — Reflector Interior high temperature White
- **Reflector** accommodates 100 watt or any A-19 or A-21 medium screw base lamp
- **Wired Complete** with switch socket and 8 ft. oil resistant cord and moulded plug

WRITE FOR COMPLETE CATALOG of Localite models with various type reflectors, arms and bases for every industrial use.

LOCALITE fostoria for Light ON the Job

THE FOSTORIA PRESSED STEEL CORPORATION FOSTORIA, OHIO

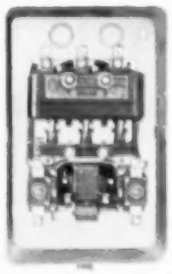
Localites are available through electrical wholesalers everywhere.

If you write maker identify as IEN - 12675

CLARK type "CY" AC MAGNETIC MOTOR STARTER

Now Available in SIZE 3

Now you can get this revolutionary starter in sizes 0, 1, 2 and 3. The size 3 uses the same new principle of arc interruption—with magnetic blowouts and twin-break contacts—which has proven so successful in size 2. It provides the extra protection and dependable operation of Mill-type, heavy-duty construction. Many built-in features mean better performance. Designed to reduce maintenance costs to an absolute minimum. Contact surfaces can be quickly inspected without tools. Contacts are easily and quickly replaced without removing starter from cabinet. All parts are accessible and removable from the front.



Clark Bulletin 8013 Type "CY" AC Magnetic Starter, Size 3 with NEMA 1 Cabinet, cover removed. Note clean design with plenty of wiring space.

CLARK Type "CY" AC Magnetic Starters are available in a wide variety of sizes, types of cabinets, and combinations of devices.

Write for information.

THE CLARK CONTROLLER CO.
ENGINEERED ELECTRICAL CONTROL — 1146 EAST 152ND STREET, CLEVELAND 10, OHIO

If you write maker identify as IEN - 12676

WELDING . . Oxy-acetylene torch to take interchangeable welding heads

Source: LINDE AIR PRODUCTS CO. 30 E. 42nd St., Room 308, New York 17, N. Y.

Handles are extruded brass

Purox W-202 for general use and W-201 for light operations have been added to the company's line of welding equipment. The larger unit is suited for continuous heavy welding and heating on metals ranging from 32 gage to plate or castings 1 in. in thickness. The lighter unit differs only in that it is 1½ in. shorter in overall length. It is suited for welding on metals from 32 gage to ⅜ in. in thickness.

Operation is characterized by freedom from tendency to pop or backfire. A coiled oxygen delivery tube suppresses any flash back. Thirteen interchangeable welding heads lock to the handle with a connection nut and are sealed by O-rings between the head and handle. Heads are changed by hand without difficulty when desired.

If you write maker identify as IEN - 12677

TESTING . . Ohmmeter to test insulation, provides 10 ranges

Source: SOUTHWESTERN INDUSTRIAL ELECTRONICS CO. 2829-33 Post Oak Road, Dept. 461, Houston 19, Tex.

List is $160

Resistance meter Model C3 is a new portable instrument to test electrical equipment and components. It provides an overall range between 1 ohm and 1 million megohms. It mounts a black anodized front panel on its aluminum housing which measures 6½ by 6½ by 10 inches. Accuracy is within 3 per cent of full scale for all ranges except the highest megohm range. This is within 5 per cent of full scale.

Two circuits are employed in the meter. One is powered by a 1½ volt battery for the four lowest resistance ranges. These are read on the upper scale of the meter. The megohm ranges are powered by connecting the instrument to a 110 volt 60-cycle ac. line through a regulated power supply to provide 105 volt dc. to the unit under test.

Identify as IEN - 12678

Not only bright finish, but also many color shades, can be obtained by Alumilite coatings in connection with a new aluminum alloy which its maker Aluminum Company of America has named Alcoa C578. Giftware, refrigerator and automobile trim are typical applications in competition with stainless steel and chromium plating. The treated aluminum has excellent forming characteristics.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12679

Couch Phones Pay Dividends

If you are fed up with busy signals, excessive switchboard traffic, high phone bills, and time-wasting non-business calls . . . Couch Phones offer a solution. Expensive? No . . . not when you consider that you are now paying for them many times over through these same high phone bills and lost time due to busy signals and personal calls.

Couch Autophones combine privacy with the convenience of individual dial operation, and their original cost is the last cost. Investigate the advantages of Couch Inter-com Phone Systems. Write today for Bulletin 5282.

S. H. Couch Company, Inc.
NORTH QUINCY 71, MASSACHUSETTS

If you write maker identify as IEN - 12680

COST-CUTTING "STREAMLINER" CONVEYOR SYSTEMS

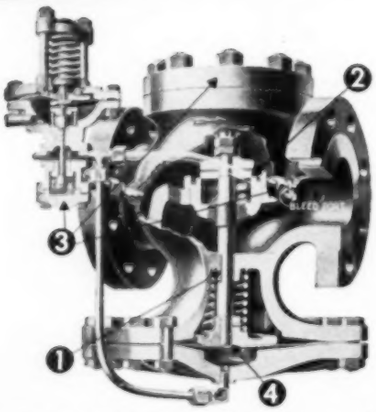
Set up for continuous production! To eliminate needless manhandling, to speed the flow of materials from one department to another . . . metal stampings are moved from punch presses to assembly operation on a "Streamliner" Horizontal Belt Conveyor. Because it's engineered to customer's plant and product, this production-increasing "Streamliner" saves time, money and effort—helps to move materials safely. Too! Write for our 24-page "idea-stimulating" catalog. It shows examples of "Streamliner" Conveyors in action!

HARRY J. FERGUSON COMPANY
125 WEST AVENUE, JENKINTOWN, PENNA

If you write maker identify as IEN - 12681

Here's Why SPENCE REGULATORS

CUT COSTS . . . REDUCE MAINTENANCE



Thousands of installations throughout the country have proved that Spence Pilot-Operated Regulators provide *dependable, trouble-free* pressure and temperature control year-in, year-out. Here are a few of the many Spence features that save you money . . . help keep *maintenance at a minimum.*

1. PACKLESS CONSTRUCTION of all Spence main valves and most pilots *eliminates the need for closely fitted parts* that may stick or bind due to uneven expansion or foreign matter.

2. DURABLE SECO METAL SEATS AND DISCS resist wiredrawing. More than 20 years of experience with SECO Metal *has failed to produce one case where it has been cut by steam.*

3. EASY TO CLEAN WITHOUT DISMANTLING — The seat and disc of the main valve and pilot can be cleaned and any working part removed *without taking the main valve out of the line.*

4. LONG-LIFE METAL DIAPHRAGMS, under usual conditions, never require replacement. The durable spring in the Spence Regulator operates at low unit stress . . . *out of the path of the steam* or other fluid flowing through the valve.

FREE BULLETIN NO. 4000 gives complete data . . . contains full color, fully illustrated description of the operating cycle of a Spence Regulator.

Spence

RS-104

SPENCE ENGINEERING COMPANY, INC.
WALDEN, NEW YORK

If you write maker identify as IEN - 12683

MYSTIK® BRAND TAPES "SELF-STIK"

New!

MYSTIK® BRAND

Corner Protectors!

These rubberized fiber Corner Protectors attach by their own adhesive to corners of metal sheets. Protect corners from damage. Prevent corners from scratching other surfaces or causing personal injuries. Save countless dollars of refinishing and replacement on finished work. Easy to attach. Stay on sheets during storage, transfer, fabrication. Write for information and free samples. Mystic Adhesive Products, 2644 N. Kildare, Chicago 39.

Trademark Mystic Registered

© Mystik Adhesive Products, 1952

If you write maker identify as IEN - 12684

If you write maker identify as IEN - 12686

EXTRUDING . . Press and equipment to make rigid plastic pipe to 6 inches

Source: F. J. STOKES MACHINE CO.
5956 Tabor Road, Philadelphia 20, Pa.

Specifications on request

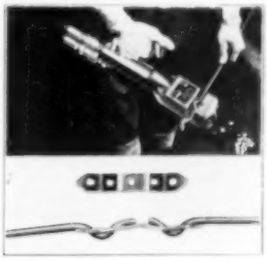
Illustrated is one of the company's Stokes-Windsor extruding presses and new control. The two form part of a complete packaged unit including the dies, a cooling unit, a pulling mechanism and a cut-off saw to make rigid plastic pipe in diameters to 6 inches. A stacking device can be supplied for operation beyond the saw location. Wall thickness of the pipe is maximum at 0.05 inch. Extrusion is with compounded or dry blended material in one operation.

The pipe takes approximate dimensions as it leaves the extruding die. It is brought to size in a forming box or by means of a swaging die. Dies and mandrels are precision machined, chrome plated and tested prior to shipment with the equipment. They provide a mirror-like finish to both the inside and the outside of the pipe.

If you write maker identify as IEN - 12687

FASTENING . . Splicing clip and hydraulic tool joins wire ends

Source: MANCO MFG. CO.
Grove & West, Bradley, Ill.



Replaces tying or welding

The trailing end of a coil of wire that has been fed through a heat treating furnace is connected securely to the leading end of the next coil to be pulled through by means of this new double V-form steel clip and the company's Model R-210-18TE portable hydraulic tool. Straight ends of the wire are pushed through the holes in the clip and the tool is employed to flatten the clip into gripping position as shown in the illustration.

Two clip sizes take wire to ⅞ and ½ in. maximum diameter. The clip will maintain its grip at temperatures to 1,800 deg. F. to pull the leading end of a coil of wire through the furnace. The heat number of the coil can be stamped on the clip.

The hydraulic tool rates 10 ton. It is operated by a motor driven hydraulic pump for operation on 220-440 volt three-phase 60-cycle ac. The pump connects to the tool through a length of hydraulic hose.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12688

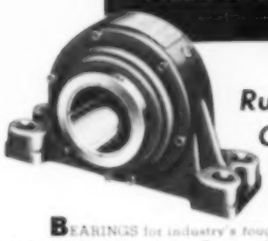
Cut snow removal from hours to minutes around your plant with this handy, efficient Jari, Jr. Rotary Snow Plow for walks and driveways. It's self-propelled, and fast . . . clears 4500 sq. ft. and handles up to 18 tons of snow . . . per hour!

SPECIFICATIONS: 2-wheel drive, self-propelled with positive forward movement. Easy starting 1½ hp. gasoline engine, independent clutch. Clears a clean 16-inch path. Rotary rake chews hardened snow for easy removal. Adjustable casting chute. Weighs only 129 lbs. Extra attachments: 28" sickle bar or 20" reel for use as a power mower.

At your dealer or write to
JARI PRODUCTS, INCORPORATED
2928J Pillsbury Ave. Minneapolis 8, Minnesota

If you write maker identify as IEN - 12689

NEW DODGE-TIMKEN ALL-STEEL PILLOW BLOCKS



Rugged! Compact!

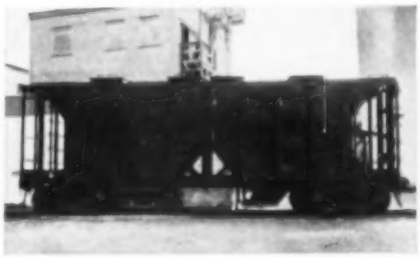
BEARINGS for industry's *toughest jobs*. High radial and thrust capacities. Stamina for heavy shock loads. All-steel construction that packs this load-carrying capacity into less weight and less space than ever before. A joint engineering development by Dodge and Timken. Write for details and delivery dates or call your Dodge Distributor.

DODGE MANUFACTURING CORPORATION, 600 Union St. Mishawaka, Ind.

DODGE

of Mishawaka, Ind.

If you write maker identify as IEN - 12690



CORROSION SIDETRACKED!

Give your plant, equipment and products the protection of coatings like these—coatings that withstood fifteen months of contact with highly corrosive soda ash! And they're *still intact* on this hopper car, with months of service ahead!

That's because they're based on VINYLITE Brand Resins. The stenciling, done with ordinary enamel, was eaten away months ago. Beating the car with hammers to loosen the load broke the surface in spots. But the finish stuck firm around them, preventing rust creepage.

It's another example of the service you'll get from properly formulated, properly applied coating systems based on VINYLITE Resins. On metal, concrete and masonry, they resist oil, water, corrosive atmospheres, and most chemicals. Drying in a few minutes, they're odorless, tasteless, non-toxic and non-flammable. With a wide range of colors, they're unchanged by repeated scrubbing or washing.

On chemical and food processing equipment, tanks, pipelines, rigging, machinery, containers . . . scores of places where corrosion and wear are big factors . . . use coatings based on VINYLITE resins. They have the unique properties that make VINYLITE Brand Resins useful for a host of products in defense and basic industry.

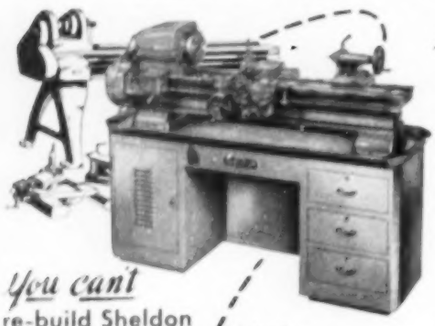
Let us send you the latest technical data and a list of representative suppliers. Write Dept. ME-3.

Data courtesy the Glidden Company, Cleveland, Ohio

Vinylite BRAND RESINS

BAKELITE COMPANY
A Division of Union Carbide and Carbon Corporation
30 East 42nd Street, New York 17, N. Y.

If you write maker identify as IEN - 12692



You can't
re-build Sheldon
Efficiency into an old lathe . . .

This practice of re-building complete machine tools is just poor business. You just can't re-build the accuracy, speed, convenience, and production capacity of a modern space saving Sheldon Precision Lathe into the cumbersome shell of an old lathe of obsolete design.

First, you would have to build in "Easy Precision" Timken Roller Bearings—there are no other bearings to consider. You would have to bore a 1¼" hole thru the spindle to get Sheldon's capacity, and hold turned accuracy within 0 to .0005". You would have to re-grind and scrape bed ways within tolerance of .0002" per ft. and hold travers, ways and parallel alignment within .005"; and replace pitted lead screw with one cut on the latest Pratt & Whitney thread miller, etc. Only Sheldon's 18 accuracy tolerances . . . and still you would not have the efficiency of a fast, convenient, space-saving and power-saving Sheldon Precision Lathe, which you can buy today from your tool distributor, fully assembled and ready to work. Don't re-build, replace for efficiency. Write for Catalog

SHELDON
CHICAGO U.S.A.

Sheldon Machine Co. Inc., 4208 N. Knox Ave., Chicago 41, Ill.

If you write maker identify as IEN - 12693

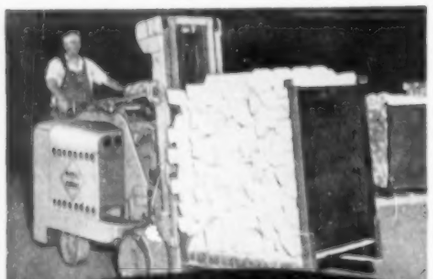
SALIENT FEATURES OF HAR-BAR BARRIERS

1. High enough to stop your car.
2. Low enough to clear your bumper guards.
3. Barrier is above ground — no drainage problem.
4. Barrier is above ground — no rotting of wood.
5. Automatically spaces your cars.
6. Follows contour of your ground.
7. Easily installed — just line up and drive the anchor pins.
8. Easily moved — just pull the anchor pins. 100% reusable.
9. Easy to clean under.
10. Easy to maintain.
11. Installed on any kind of surface — black top, cement, macadam, gravel or cinders.
12. It really dresses up your parking lot.
13. You always stop against your tire — no shock.
14. Castings are non-rusting aluminum alloy.

Send us a plot plan of your parking lot—we do the engineering free.

HARRIS-BARRIER, INC. 5407 N. PENNSYLVANIA STREET INDIANAPOLIS 5 - INDIANA

If you write maker identify as IEN - 12694



10 Times Less Labor WITH ELWELL-PARKER Trucks

A leading manufacturer of magnesium has found that his S-E-P trucks can handle more tonnage than 30 men. As illustrated, the lightweight ingots are assembled in nasty unit loads on special skids. Agile Elwell-Parkers then express the metal from production areas to temporary storage or directly into freight cars. There are no costly delays, because dependable Elwell-Parkers *stay on the job!* . . . E-P trucks are saving labor and speeding production in over 500 industries. Get the full story by writing for:

NEW ILLUSTRATED CATALOG
THE ELWELL-PARKER ELECTRIC CO.
4065 St. Clair Avenue • Cleveland 3, Ohio

If you write maker identify as IEN - 12695

DISPENSING . . Needle type cap for container holding glue, lubricant

Source: GAUNT INDUSTRIES
825-29 Irving Park Road, Chicago 13, Ill.

Complete kit $3.75

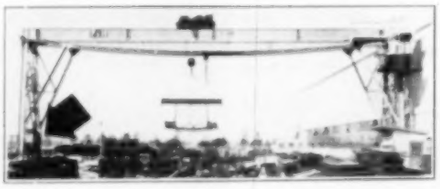
Handy-Hypo trade names the hollow needle cap which the company is now offering for application on tubes or small oil type cans of materials such as glue, grease, oil, to assist in controlled dispensing. The cap measures 1 in. in length including its needle which is 0.023 in. in inside diameter. A wire is supplied for insertion into the needle, after it has been used to dispense glue, to keep the materials from drying in the bore. Price is three for $1.50.

The company also is prepared to supply a kit containing its previously developed lubricating units and one of the new caps.

If you write maker identify as IEN - 12696

CRANE . . Fifteen ton gantry carries its own engine driven generator

Source: HARNISCHFEGER CORP.
4402 W. National Ave., Milwaukee 14, Wis.



No usual power lines

Direct current for operation of the hoist carriage and travel motors on this new 60-ft. 15-ton crane is provided by a 50-kw. generator direct connected to one of the company's 4-cylinder 80-hp. diesel engines. Engine and generator are mounted in the outboard leg of the crane. Controls for the engine and for the crane itself are centered in the operator's enclosed heated cab on the inboard leg. Individual electrically interlocked motors are mounted on both legs for uniform crane travel.

Identify as IEN - 12697

Tarpaulins are now being made of 10-gage DuPont plastic by American Agency in New York City. The material is water proof. It will not crack, peel, warp, shrink, burn. It can be used to protect equipment, vehicles, indoors and outside. Available sizes range from 8 by 9 ft. to 22½ by 22½ feet. Prices are $5 to $31.50. Color is opaque Navy blue. Grommets are inserted at 3-ft. intervals.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12698

PAINT OVER RUST WITH TYGORUST!

"the 'no-prep' vinyl primer"

- minimizes surface preparation
- dries hard in minutes
- goes under any type finish
- provides excellent adhesion
- inhibits rust formation

TYGORUST is a new and unique primer specifically developed to permit the use of TYGON and other vinyl based coatings on rusted ferrous metals. Its outstanding features include easy application — fast drying — high coverage — excellent adhesion to wet or dry rusted steel, wood, concrete, or previously painted surfaces — excellent adhesion for vinyl, nitrocellulose, alkyd, oleoresinous, or bituminous finishes—and, real resistance to rust formation.

Write for details today — try TYGORUST tomorrow!

U. S. STONEWARE CO.
Akron 9, Ohio

If you write maker identify as IEN - 12699

"Blasts" for jets

For major engine parts that put the "blast" in jets, Lycoming is one of General Electric's leading sources of precision production.

Powering a jet for maneuvers at incredible speeds demands engine parts that are tough, precise, unfailing. That's why Lycoming is a leading supplier of jet engine components for General Electric—one of many foremost manufacturers who rely on Lycoming skill and resourcefulness.

Whether your need is precision machining, product development, high-volume production—or air-cooled power—Lycoming's extensive research facilities and well-rounded experience stand ready to serve you. *Whatever* your problem—look to Lycoming!

AIR-COOLED ENGINES FOR AIRCRAFT AND INDUSTRIAL USES, PRECISION AND VOLUME MACHINE PARTS, GRAY IRON CASTINGS, STEEL PLATE FABRICATION

LOOK TO **LYCOMING** FOR RESEARCH. FOR PRECISION PRODUCTION.

Lycoming Spencer Division, Williamsport, Pa. Bridgeport Lycoming Division, Stratford, Conn. AVCO

If you write maker identify as IEN - 12700

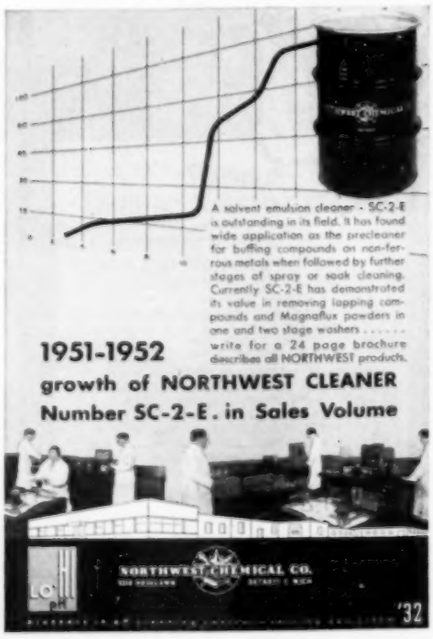
New, unique electrical quantity recorder!

FIELDEN TEKTOLOG

OPERATES ON NEW PRINCIPLE. Simple electrical meter, with a lightweight vane in place of customary pointer, replaces usual complicated circuitry and mechanisms. Servomotor positions a follower vane, maintains fixed spacing with respect to meter vane, and drives the pen. 50 microamps, 15 millivolts or higher. 1% accuracy. Simple, dependable, low cost. For information, write Dept. VN-103.

fielden
INSTRUMENT DIVISION
ROBERTSHAW-FULTON CONTROLS COMPANY
2920 North 4th Street • Philadelphia 33, Pennsylvania

If you write maker identify as IEN - 12701



If you write maker identify as IEN - 12702

STOP THE BIGGEST THIEF IN AMERICA

OAKITE GIVES YOU THREE WAYS TO FIGHT RUST

Day and night—wherever your steel is stored or handled—RUST, the biggest thief in America, is robbing you of production, robbing you of profit.

Oakite can help you defeat rust these three ways:

1 By removing rust from raw steel.

2 By preventing rust during processing.

3 By preventing under-coat rusting of painted products.

FREE For the Oakite Anti-Rust Kit describing these ways to stop RUST in your plant, write to Oakite Products, Inc., 16A Rector St., New York 6, N. Y.

Technical Service Representatives in Principal Cities of U. S. & Canada

OAKITE SPECIALIZED INDUSTRIAL CLEANING MATERIALS · METHODS · SERVICE

If you write maker identify as IEN - 12703

ONE SOURCE

...for EVERY TYPE of abrasive in high-speed PORTABLE GRINDING...

...used on EVERY TYPE of portable grinding operation in metalworking...

...more proof that only

CARBORUNDUM

TRADE MARK

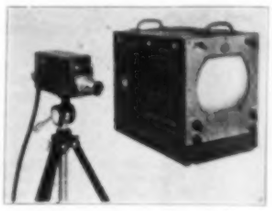
offers ALL abrasive products ...to give you the proper ONE

"Carborundum" and "MX" are registered trademarks which indicate manufacture by The Carborundum Company, Niagara Falls, N. Y.

If you write maker identify as IEN - 12705

SIGNALING . . Television equipment reproduces observed remote conditions

Source: RADIO CORP. OF AMERICA
1941 Front & Cooper Sts., Camden 2, N. J.



New Vidicon equipment

Model 1TV-5 is new design of the company's industrial television equipment, previously described IEN-4206-50. It features simplicity, compactness, good picture quality and low cost operation. It can maintain continuous visual check on industrial operations and research laboratory experiments that are too remote, inaccessible, or hazardous to be viewed directly by workers on the scene.

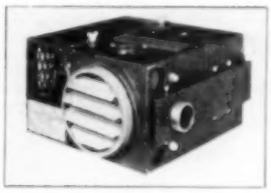
The equipment consists of two units, the camera which measures 10½ by 3½ by 5 in. and the combination monitor, power supply and control unit which measures 20 by 13 by 15½ inches. The camera weighs 7½ pounds. The monitor weighs 70 lb. and mounts a 10-in. viewing screen. Connection between camera and monitor is by an 18-conductor cable measuring 0.625 in. in diameter. The two units can be located at any distance to 250 ft. apart for direct connection through the cable.

The camera is designed to use standard 16-mm. motion picture lenses with a "C" mount for ready interchange. Control is centered on the monitor for picture brightness and contrast, beam intensity, electronic and optical focus. Scanning frequencies are the same as those for standard broadcast television so home television sets can be employed as auxiliary viewers. The equipment can be operated also with microwave transmission from the camera to the receiver to cover extended distances. Operation is on 110-volt 60-cycle ac.

If you write maker identify as IEN - 12706

HEATING . . Gasoline space unit for use in motor truck cabs and bodies

Source: HUNTER MFG. CO.
1548-52 E. 17th St., Cleveland 14, Ohio



Burns pint per hour

Battery connected igniter for cold starting and a motor driven blower, also connecting to the battery, are employed to operate this new gasoline-fired space heater under control of a thermostat. The heater measures 10 by 10 by 6 inches. It mounts under the cowl of a truck cab or back of the driver's seat or in any other convenient location in a panel or walk-in truck body. Products of combustion are exhausted outside of the truck. The blower draws in fresh and recirculating air and delivers them over the hot combustion chamber.

Heat rating is 15,000 btu. per hr. with air circulation at 110 cfm. Power required over the available speed range is 4.5 to 10 amp. at 6 volts, 2.5 to 6 amp. on 12 volts. An additional 10 amp. on 6 or 12 volts are required for the cold start.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12707

"Custom" Features IN ECONOMICAL STANDARD STEEL LOCKERS

penco

Penco gives you a choice of 337 combinations of standard locker types, sizes and design variations—permitting maximum flexibility in locker room planning! Have your own "custom-type" installation at standard cost! Locker catalog No. L-100 shows how. Send for it now!

Penco Single Tier Lockers with slope tops and closed bases—boost employee morale, promote locker room cleanliness!

Founded 1889 by E. Irwin Sagendorph

PENN METAL Corporation of Penna.

80 OREGON AVENUE, PHILADELPHIA 48, PA.

If you write maker identify as IEN - 12708

This Little Tool Pays For Itself Every Week In The Year

New DREMEL Moto-Screwdriver for small screws

$24.50 Model 59-2 For Screws No. 4 to No. 8 (Driver bit not included)

$19.50 Model 10-1 For Screws No. 2 to No. 4 (Driver bit not included)

Here's greater efficiency for you—right in the grasp of your hand. With a new Dremel Moto-Screwdriver, operators on assembly work can drive five or more **free-running screws or nuts** in the time it takes to drive one by hand. A slip clutch prevents stripping screw or hole threads; bits are removed simply, by hand; and the machine can readily be used for unscrewing work. Many companies report it paid for itself in the first day of service; nearly everyone says it pays back its small cost every week in the year.

Ask your dealer or send for a free factual data sheet on the operation of this time-saving tool that will start you on your way to lower the cost of production in your plant. Write.

DREMEL MFG. CO. 2300 18th St., Racine, Wis.

If you write maker identify as IEN - 12709

Assure a Free-Cutting Wheel IN GRINDING OPERATIONS WITH

Delpark COOLANT FILTERS

Attrition in grinding operations is reduced to a minimum by Delpark Full-Flowing, Self-Cleaning Coolant Filters. Complete and continuous filtration of the coolant as it comes from the work removes heat bearing solids, prevents loading of the wheel. A free-cutting wheel assures greater accuracy, speeds production with less wheel dressing, longer wheel life. Two to several hundred gallons per minute capacities.

- Fully automatic • No down time for cleaning reservoir • Extends coolant life • Uniform coolant temperature

Delpark INDUSTRIAL FILTRATION

Backed by 30 Years Experience in Industrial Filtration

Write for more complete information

INDUSTRIAL FILTRATION COMPANY
5111 Industrial Avenue • Lebanon, Indiana

If you write maker identify as IEN - 12710

It's NEW!

It's FAST! TOLEDO SPEEDWEIGH OVER-UNDER SCALES

Here's *new speed with accuracy* for you in check weighing, packaging, many other operations today . . . 3 sizes—to 5 lb., to 20 lb., to 50 lb.! Shadowfree wide-angle reading . . . accurate to 1/64 of an ounce . . . new improved knife-edge check link system . . . *exclusive* "coined" bearings for greater accuracy, longer life . . . stainless steel beam . . . enclosed levers in one-piece housing . . . choice of platters and scoops . . . many more *plus* features! Write for bulletin 1416. Toledo Scale Company, Toledo 1, Ohio.

TOLEDO Headquarters for SCALES

If you write maker identify as IEN - 12711

"MAGNETIC COUPLING" Exclusive Feature of DWYER MAGNEHELIC PRESSURE GAGE

The unique design cannot be harmed by sudden pressure surges, shock loading or severe vibration. For accuracy, sensitivity, and long service life the Dwyer Magnehelic Gage cannot be equalled.

Extreme accuracy results from the elimination of friction between the flexible diaphragm and the indicating mechanism. A magnetic force transmits pressure fluctuations to the 3½" easy-to-read dial of the Dwyer Magnehelic Gage.

A Precision Instrument Sensitive to Pressure, Pressure Differentials or Vacuum from 0-1" water or 0-2 psi.

Send for Bulletin No. 250 for complete description today.

F. W. Dwyer Mfg. Co.
307 S. Western Avenue
Chicago 12, Illinois

If you write maker identify as IEN - 12712

Revolutionary! NEW Wheeler "DAY-FLO UPLITER" INDUSTRIAL FIXTURE LINE

Reduces direct glare to a minimum! Approximately 28% of total fixture distribution is UPWARD and 72% is DOWNWARD. Result — better brightness ratios . . . higher quality illumination . . . greater seeing comfort. Individual or Continuous mounting. For further details, write: WHEELER REFLECTOR COMPANY
275 Congress St., Boston 10, Mass.

Wheeler REFLECTORS

MADE BY SPECIALISTS IN EQUIPMENT SINCE 1881

If you write maker identify as IEN - 12713

SAVE YOUR OIL, MONEY AND MACHINERY WITH HILCO LUBRICATING AND INDUSTRIAL OIL MAINTENANCE EQUIPMENT - - -

A COMPLETE LINE OF EQUIPMENT FOR RECLAIMING, FILTERING, PURIFYING AND RE-REFINING OIL

★ Hilco units are available for continuous or batch operation. You can keep your lubricating and industrial oils clean and recover large quantities of oil at low cost.

Whenever Oil is used it becomes contaminated — must be discarded or conditioned for further use

There Is a **HILCO** to do This Job for You

Cleans Oil. Reduces Down Time, Increases Production!

★ Tell Us About Equipment You Are Operating and We Will Forward FREE Literature and recommendations.

OIL PURIFIER DIVISION
THE HILLIARD CORP.
35 W. 4th ST. • ELMIRA, N. Y.

IN CANADA — Upton Brodeur James, Ltd. 990 Bay St., Toronto; 3484 Park Av., Montreal

If you write maker identify as IEN - 12714

WEIGHING . . Automatic scale checks and rejects off weight articles

Source: H. A. HADLEY ASSOCIATES INC.
39-43 Barlow St., Winooski, Vt.

$2,800 and up

Finished products, small filled containers, are delivered to the weighing station in this new electronic automatic over and under check scale by a chain conveyor driven by or synchronized with a user's conveyor. The work comes to rest momentarily to be check weighed against a predetermined setting. It is allowed to continue in its straight path if it comes within required limits. It is rejected at right angles if it is over or under an acceptable amount.

Capacity is about 60 weighing cycles per minute, depending on the work. Smallest assembly in the line measures about 21 by 18 by 16 inches. Metrogram is the trade name. Standards can range from milligrams to pounds. The equipment is available for specified use.

If you write maker identify as IEN - 12715

MOTOR . . Gear head design, 1 to 75 hp., 13.5 to 780 rpm. output

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

Speed as specified

Illustrated is a new assembly of the company's Tri-Clad ac. motor with an adapter ring and a foot equipped planetary gear assembly. The complete unit can be specified at a desired speed between 13.5 and 780 rpm. The design is intended particularly to permit removal and replacement of the motor stator without dismantling the geared end of the new assembly.

The motor is standard bottom ventilated design for drip proof operation. Standard rating is 1 to 75 hp. Larger sizes, to 200 hp., can be supplied. The gear housing is equipped with a magnetic drain plug.

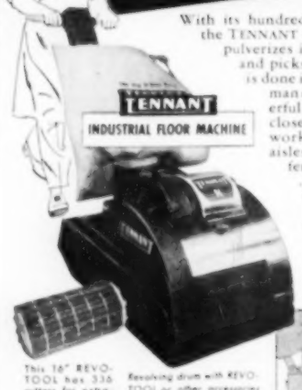
identify as IEN - 12716

New organization of forty experts has been assembled to act as an extension of your own engineering department, if you are manufacturing gasoline or diesel engines, standard or automatic transmissions, hydraulic torque converters, related accessories and power units. Vac-Trol Engineering Company in Detroit is prepared to assist with design of tools, fixtures, gages, special machines, with production methods, planing, plant engineering, layout, handling, cost estimating, product modification to facilitate tooling.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12717

Cuts grime from floors... and picks it up, too!



With its hundreds of flying cutters, the TENNANT Model "K" literally pulverizes incrusted grime . . . and picks it up, too! The job is done in one *fast, easy,* one-man operation. The powerful Model "K" gets in close to machinery . . . works fine in crowded aisles . . . doesn't interfere with production . . . cleans 6 to 20 times faster than hand labor . . . leaves clean, smooth floor *ready for traffic.*

- Cuts grime loose
- Smooths & levels
- Picks up sallage

This 16" REVO-TOOL has 336 cutters for extra-heavy grime.

Revolving drum with REVO-TOOL or other accessories loosens and hurls heavy sallage into large hopper. Suction pulls lighter dirt up into bag.

WRITE for Bulletin 81.5

G. H. TENNANT CO.
2574 2nd St. N., Minneapolis 11, Minn.

TENNANT

If you write maker identify as IEN - 12718

IT'S BORIUM

The blast cleaning nozzle that lasts and lasts and lasts

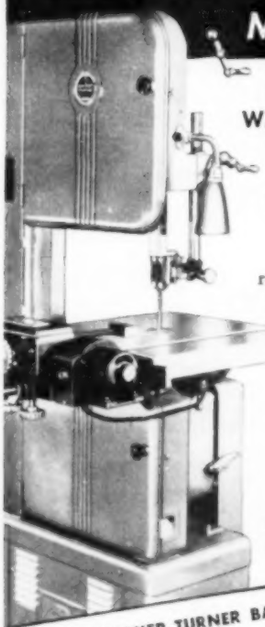
- Hard, wear-resistant Cast Tungsten Carbide Liner
- Resists cut outs
- Retains almost uniform orifice size throughout life
- Saves compressed air
- Keeps patterns beamed on the work
- Guaranteed 300 hours when cleaning with silica sand or most common abrasives. Usually lasts longer!

Borium Nozzles are made in standard screw and flange types. Special Borium Inserts can be furnished to your specifications. Write for descriptive folder.

STOODY COMPANY
11930 East Slauson Avenue
Whittier, California

If you write maker identify as IEN - 12719

Designed for those who need LIGHT-HEAVYWEIGHT Machines



16" and 14" WALKER-TURNER Band Saws

For jobs where neither the capacity nor expense of a heavy industrial machine is warranted, and a "hobby machine" would be inadequate, Walker-Turner has engineered a special class of light-heavyweight Band Saws. Use space below to write for complete information.

SOLD ONLY THROUGH TRAINED INDUSTRIAL DISTRIBUTORS

16" WALKER-TURNER BAND SAW

Low in initial cost, high in operating efficiency. Automatic power feed maintains pre-set feeding pressure, lessens operator fatigue. Capacity: blade to frame 16", guide to table 8". 8 blade speeds. Fast, accurate, safe, and easy to handle.

WALKER-TURNER
• DIVISION •
KEARNEY AND TRECKER CORPORATION
PLAINFIELD, N. J.

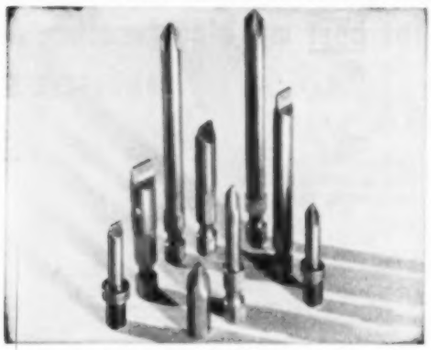
DRILL PRESSES • RADIAL DRILLS • TILTING ARBOR SAWS
BELT and DISC SURFACERS • METAL-CUTTING BAND SAWS
LATHES • SPINDLE SHAPERS • JOINTERS

Use this space

to write for full details and specifications.
Walker-Turner Division, Kearney & Trecker Corp.
Dept. IE-11, Plainfield, N. J.

(Please write your name and address in margin of page)

If you write maker identify as IEN - 12721



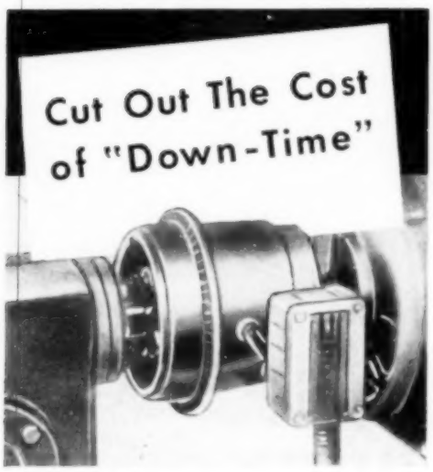
You save replacement time with HOMMEL power screwdriver bits

Specially selected alloy steel and proper heat treating have given Hommel bits the hardness and toughness required for maximum service without replacement. A complete line for air and electric power screwdrivers is available . . . consisting of ¼ hex drive and threaded shank bits for slotted, Phillips, Frearson or Reed and Prince screws. Write now for catalog to Dept. IEN.

Since 1906 **HOMMEL**

Ludwig Hommel & Co., 72 First Ave., Pittsburgh 22, Pa.

If you write maker identify as IEN - 12722



Anchor-Waldron Overload Cut-Outs

Automatic shut-off and reset. Save time lost by sheared drive pins.

A positive mechanical, electrical and completely controlled device that instantly shuts off the motor when an overload occurs and then resets itself automatically. With overload removed, you simply push a starter button. Protects horsepower—saves time, money and maintenance work. Siren or light signals can be installed to give ample warning of a build up in load. Available in flexible coupling type for direct connected drives—in pulley type for belt and chain drives. Easily adapted for a wide variation of horsepower.

Our new catalog 51 gives full information and engineering data. Write for your copy.

Also WALDRON Gear Type and Francke Pin Type Couplings. Catalogs on request.

JOHN WALDRON CORP.

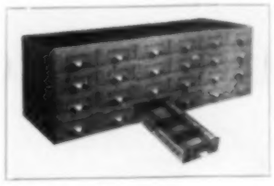
NEW BRUNSWICK · NEW JERSEY

Sales Representatives in Principal Cities

If you write maker identify as IEN - 12724

STORING . . Small parts cabinet with twenty-four compartment drawers

Source: BAY PRODUCTS INC.
3003 No. 16th St., Philadelphia 32, Pa.



List is $26.25

No. 2410 is a new steel cabinet in the company's line of small parts handling equipment in which the drawers are shifted at 1 in. intervals, between the front and back, to carry partitions. The drawers measure 5½ by 10½ by 1⅝ inches. Overall dimensions of the housing are about 33½ by 11½ by 10¾ inches. The assembly includes 48 No. 186 dividers.

If you write maker identify as IEN - 12725

PLASTIC . . Thermosetting powder and wetting agent to make shell molds

Source: DUREZ PLASTICS & CHEMICALS INC.
6 Walck Road, North Tonawanda, N. Y.

Ask for literature describing process

New formula is announced by the company for its thermosetting phenol-formaldehyde plastic resin and an optional wetting agent to bond sand that is to be used in making shell molds. Two forms of the material are available for dumping and blowing application in the mold manufacture. The wetting agent is employed when the resin and sand are mixed in advance of the mold making operation. The mixture can be stored under normal atmospheric conditions for an indefinite length of time.

The mold making process employs dry ingredients which are dumped or blown against the hot surface of a metal pattern or core box and allowed to dwell there for a few seconds. Then the mold is baked in an oven to cure or harden the binder. Finally the shells are removed ready for use.

If you write maker identify as IEN - 12726

MELTING . . Gas fired unit for asphalt, glue, lead, paraffin

Source: WELDIT INC.
996 Oakman Blvd., Detroit 6, Mich.

Connection is made to a source for butane or propane gas to operate this new melting equipment. It consists of a stand, a burner and a materials pot. Two designs measure 8¾ and 10 in. in height. Both can be employed to melt and hold various process materials. The burner can be adjusted from a low warming heat to a maximum of about 65,000 btu. per hr. when desired.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12727

If you write maker identify as IEN - 12728

NOTHING LIKE IT!

'Tugit' is the only lever-operated lifting and pulling tool built like a hoist. It gives you efficient, spur-gear action; has a powerful, automatic load brake for fast, smooth, safety-first operation.

'Tugit' is light, portable. Fits into any tool box. It is a compact hoist — functions perfectly at any angle in close quarters. You can use it in trenches to lay pipe. Stretching cable, assembling equipment, or stretching fences — whatever the job — 'Tugit' saves time and energy. Available in one and two-ton sizes. The smallest size will move a 1-ton load as little as ⅝" — quick, accurate spotting is easy. Write for a copy of Bulletin No. 388 for full details.

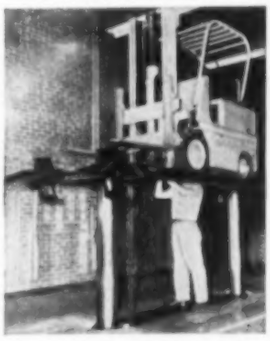
'TUGIT' HOISTS

MANNING, MAXWELL & MOORE, INC.
MUSKEGON, MICHIGAN

Builders of "Shaw-Box" Cranes, "Budgit" and "Load Lifter" Hoists and other lifting specialties. Makers of "Ashcroft" Gauges, "Hancock" Valves, "Consolidated" Safety and Relief Valves, and "American" Industrial Instruments.

If you write maker identify as IEN - 12729

Industrial Trucks Easily Serviced on a GLOBE Lift



A Globe Industrial Truck Service Lift raises electric or gasoline-driven industrial trucks to give full accessibility to underneath parts. Inspection, lubrication, and servicing is speeded to save substantially on time and labor. Available in either single or 2-post models.

GIVE YOUR BUSINESS A LIFT!

If you have a lifting problem, solve it with a Globe Lift. Write for valuable data on Self-Leveling Ramps, Machine Feeding Lifts, Loading Dock Lifts, Ramp Eliminators, Production Lifts, etc. Ask for Bulletin IE419.

GLOBE HOIST COMPANY • 1000 S. Mermaid Lane, Phila. 18, Pa.
Factories at Des Moines, Iowa, and Philadelphia, Pa.

If you write maker identify as IEN - 12730

CALL

Your steel requirements get prompt personal attention at Ryerson. Some kinds and sizes in short supply; so use Gov't. ratings when they apply. We'll do our best to help.

RYERSON

PRINCIPAL PRODUCTS:

Bars • Structurals • Plates • Sheets • Tubing
Allegheny Stainless • Alloy Steel
Inland 4-Way Safety Plate • Babbitt
Metal Working Machinery & Tools, etc.

FOR STEEL

JOSEPH T. RYERSON & SON, Inc.

Plants at: New York, Boston, Philadelphia, Detroit, Cincinnati, Cleveland, Pittsburgh, Buffalo, Chicago, Milwaukee, St. Louis, Seattle, Spokane, Los Angeles, San Francisco

If you write maker identify as IEN - 12731

INSURE Proven Quality with JONES PLUGS AND SOCKETS

Jones Series 300 illustrated. Small Plugs & Sockets for 1001 Uses. Cap or panel mounting.

- Knife switch socket contacts phosphor bronze, cadmium plated.
- Bar type Plug contacts brass, cadmium plated, with cross section of 5/32" by 3/64".
- Insulation molded bakelite.
- All Plugs and Sockets polarized.
- Metal Caps, with formed fibre linings.
- Made in two to 33 contacts.
- For 45 volts, 5 amperes. Efficient at much higher ratings where circuit characteristics permit.

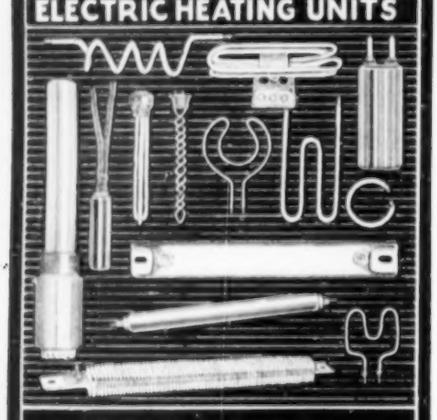
Ask for Jones Catalog No. 18 showing complete line of Electrical Connecting Devices, Plugs, Sockets, Terminal Strips. Write or wire today.

Send for complete data on this new basic improvement!

Jones HOWARD B. JONES DIVISION CINCH MANUFACTURING CORPORATION CHICAGO 24, ILLINOIS SUBSIDIARY OF UNITED CARR FASTENER CORP.

If you write maker identify as IEN - 12732

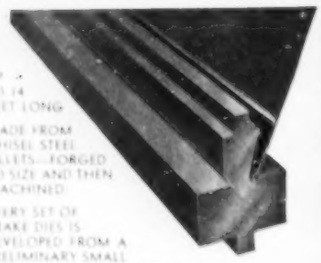
VULCAN ELECTRIC HEATING UNITS



VULCAN ELECTRIC CO DANVERS VULCAN MASS

If you write maker identify as IEN - 12733

BRAKE DIES



- UP TO 14 FEET LONG
- MADE FROM CHISEL STEEL BILLETS—FORGED TO SIZE AND THEN MACHINED
- EVERY SET OF BRAKE DIES IS DEVELOPED FROM A PRELIMINARY SMALL "TRY-OUT" SECTION—TO GET THE RIGHT SHAPE ON YOUR MATERIAL. THEN
- WE MAKE YOUR SET OF PERFECT BENDING DIES.
- BY THE MAKERS OF THE FAMOUS SEMCO NIBBLER PRESS

Write for Latest Literature. Ask for Estimates.

SEMCO SERVICE MACHINE COMPANY INCORPORATED

200 MILLER STREET ELIZABETH, N. J.

If you write maker identify as IEN - 12734

FURNITURE . . Demountable steel desk, center runner, files, shelves

Source: GLOBE-WERNICKE CO. Carthage & Ross, Cincinnati 12, Ohio

Many arrangements are possible

Steel Techniplan is new design, in steel, of the demountable wood equipment, previously described IEN-7294-51. It is based upon desk top dimensions of 30 by 40 in. and center runner dimensions of 18 by 66 inches. Partition, panels and posts are available plain or with glass windows and in heights of 48 and 66 inches. The equipment includes shelf units and integral fittings to secure the shelves, lighting fixtures, fluorescent troughs, communicating equipment and electrical and telephone connections.

All of the parts interlock firmly to the desk and auxiliary top. Tops are linoleum. Steel parts are enameled gray.

If you write maker identify as IEN - 12735

PULVERIZING . . Impact machine to powder dry granular materials

Source: PULVA CORP. 560 High St., Perth Amboy, N. J.

Specifications on request

Twin feed screws are positioned horizontally beneath the feed hopper of this new Model C in the company's Pulva-Sizer equipment. They forward materials into the grinding chamber in which the hammer-equipped impeller is belt connected to a driving motor. The hammers are stirrup type and are built up on their wearing edges with hard surfacing alloy.

The housing hinges to open quickly for access to the interior. The complete line is available in five sizes with the driving motor rating ¾ to 100 hp. Each is available in various types.

Identify as IEN - 12736

Ladder steps that weigh one pound and have an anti-slip tread are being offered by Paddock Pool Equipment Company in Los Angeles to replace chromium-plated brass steps for swimming pools. The step are made of Laminac resin reinforced with Fiberglas. Color can be mixed in. Such a step may prove useful in many other applications requiring strength, waterproofness, comfortable touch, freedom from chipping, peeling, cracking, blistering under any weather or environment conditions.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN - 12737

Toledo SIMPACT—self-contained, adjustable threader, ½" to 2" pipe.

You'll do better with Toledo Pipe Tools and Power Pipe Machines on the job! *Better workmanship* . . . Toledo assures clean-cut threads for tight, leak-proof joints. *Faster production* in threading, cutting, reaming . . . ease of operation . . . accurate, efficient performance. *Lower cost* . . . Toledo dependability saves time and labor. Write for catalog. The Toledo Pipe Threading Machine Co., Toledo, Ohio.

RELY ON THE LEADER TOLEDO

PIPE TOOLS . . . POWER PIPE MACHINES . . . POWER DRIVES

If you write maker identify as IEN - 12738

for best marking results use MARKEM METHODS

MARKEM MACHINES • MARKEM TYPE • MARKEM INKS

FOR MARKING PRODUCTS, PARTS, PACKAGES, TAPES, TAGS, LABELS

Markem Methods are engineered to solve specific marking problems. The proper combination of a Markem marking machine, Markem type and Markem ink is matched to the individual requirements. Not only are the properties of the surface itself considered, but also local conditions of temperature and humidity together with your own handling techniques during production, storage and packaging. That is why it is important that the Markem Method be followed completely.

When you have a marking problem, ask Markem about it. Send a sample of the item to be marked and details of your needs. Markem engineers have worked out practical solutions for many manufacturers. MarkeM Machine Company, Keene 2, N. H.

MARKEM BETTER MARKING SINCE 1911

If you write maker identify as IEN - 12739

ELECTRIC FEEDRAIL®

—for maximum safety, convenience, adaptability

- The FEEDRAIL system of electrification is ideal for powering portable tools on both moving and stationary production lines. It provides overhead power outlets that give your tools the full run of the production line or any part of it. And it means short electric power cables up out of the way. It also gives your production lines maximum versatility, because you change tools simply by disconnecting one and plugging in another. With ELECTRIC FEEDRAIL you're set for today's production — and tomorrow's. Without obligation, a field representative will call and give you the facts about FEEDRAIL for your needs. There's one near you.

GET THE WHOLE FEEDRAIL STORY IN CATALOG No. 25

This fully illustrated 60-page catalog tells you all about the modern ELECTRIC FEEDRAIL system of plant electrification, including information on how to plan an installation and prepare specifications. Write for a copy today.

Sold by leading electrical distributors

ELECTRIC FEEDRAIL FEEDRAIL CORPORATION

125 BARCLAY STREET · NEW YORK 7, N. Y.

SPECIALLY QUALIFIED REPRESENTATIVES IN PRINCIPAL CITIES

If you write maker identify as IEN - 12741

Now...Spring Makers and Spring Users alike have a Uniform Method for Testing Springs!

THE TORRINGTON SPRING TESTER

Uses: for accurate inspection, in-use testing, designing springs for specific uses, and as a basis for statistical quality control.

Simple: can be used at operating levels by relatively inexperienced personnel. Portable!

Accurate: 2 models—the 3 pound model measures loads to the nearest 1/100 ounce, and the 16 pound model to the nearest 1/5 ounce; lengths and deflections to 1/1000 inch.

Fast: requires minimum time to adjust for accurate readings, or to reset for other springs.

Practical: measures under conditions approximating actual use, through interchangeable fittings.

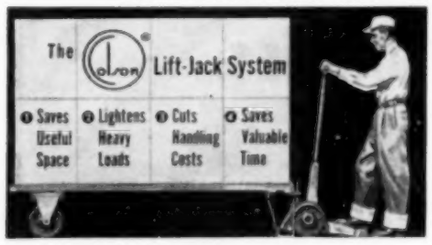
High sensitivity: over a wide range, on both tension and compression types of springs.

For complete information please write:

The TORRINGTON MANUFACTURING COMPANY TORRINGTON, CONNECTICUT

WORLD'S LARGEST BUILDERS OF SPRINGMAKING MACHINERY

If you write maker identify as IEN - 12742



Through production, in and out of storage, on and off freight cars, the COLSON Lift-Jack System saves you man-hours, money and valuable space.

Many other cost saving materials handling devices are produced for you by COLSON, including hand trucks, platform trucks, drum and barrel trucks, and precision built, roll-easy wheels and casters for every type of industrial application.

Your nearest COLSON engineer can tell you how modern materials-handling can speed up your operation and save you money. Write us or consult the yellow pages of your local phone book for the COLSON representative near you. *Write Today for new Catalog*

THE COLSON CORPORATION
ELYRIA, OHIO
CASTERS • LIFT-JACK SYSTEMS • INDUSTRIAL TRUCKS

If you write maker identify as IEN - 12743

STEEL DIES

For economical marking of names, trademarks, patent numbers, etc. on parts with flat, concave or convex surfaces, use Matthews Steel Marking Dies.

Matthews precision dies are designed and engineered to fit your present stamping equipment.

WRITE FOR COMPLETE INFORMATION

Send a sample product or drawing showing complete specifications . . . we'll forward prompt recommendations and literature.

JAS. H. MATTHEWS & CO.
3948 FORBES ST. • PITTSBURGH 13, PA.
NEW YORK • BOSTON • PHILADELPHIA
CHICAGO • CLIFTON, N. J.

If you write maker identify as IEN - 12744

DISPENSING . . Air pressure unit flows acid from its supply container

Source: THOMPSON MANUFACTURING CO.
12th & Sassafras Sts. Erie, Pa.

About $95

Type C is a new combination of the company's valve equipped acid handling unit, to install by means of an adapter in a carboy or other acid container, and a portable motor-driven compressor to establish pressure in the container for the acid delivery. The acid unit is equipped with a Schrader air valve and with a relief valve to limit pressure.

A tube line from the compressor carries a Schrader hose fitting to engage the air valve. An additional tube can be specified to deliver the acid to an elevation not more than 12 ft. above the container. The compressor develops 25-lb. pressure and can be employed alone as a utility unit.

If you write maker identify as IEN - 12745

BUILDING . . Formed steel sheet for roof, wall, partition construction

Source: AIRTHERM MFG. CO.
752 S. Spring Ave., St. Louis 10, Mo.

Illustrated data in Catalog 203

New information to correct our dimension figures has been supplied by the company for its formed sheet, previously described IEN-10527-52. The present construction employs formed corrugations measuring ⅝ in. in width at the bottom, ¾ in. at the top by 1⅝ in. in depth, not the 1½ in. we reported. The corrugations are on 6-in. centers and the width of the formed sheet is 30 inches. Thickness is 22, 20 or 18 gage. Length is to 196 inches. The 18-gage sheet rates 233 lb. per sq. ft. on a 3-ft. span in simple loading.

If you write maker identify as IEN - 12746

MARKING . . Steel stamps and holder, three character sizes

Source: PARKER STAMP WORKS INC.
702 Franklin Ave., Hartford 1, Conn.

Packaging is in a wood case for this new assembly of three sets of steel characters and a handle equipped holder in which various combinations can be set up. The sizes include characters measuring 1/16, ⅛ and 3/16 in. in height in the number set. The same sizes are available in alphabets and in symbols.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12747

FOR THESE Extras

LONGER SERVICE
LESS MAINTENANCE
HIGHER PERFORMANCE

use STAINLESS STEEL FLOATS

YOU can solve virtually all your float problems by standardizing on Stainless Steel Floats from Chicago Float Works. You get longer service and less maintenance because Stainless Steel Floats resist corrosion and withstand high temperatures and pressures. Extreme strength insures them against collapsing and they always respond perfectly to level fluctuations because of permanently high buoyancy. Install our high quality Stainless Steel Floats and be sure of long, dependable operation!

WRITE FOR FREE CATALOG

This illustrated catalog gives complete details on sizes, shapes, spud connections, and engineering data on Chicago's complete line of standard or special floats.

CHICAGO FLOAT WORKS, INC.
2340 S. Western Ave., Chicago 8, Illinois

If you write maker identify as IEN - 12748

SOUTH BEND 2-H TURRET LATHE

for Fast, Precision Machining

Its speed, accuracy and ease of handling enables the 2-H Precision Turret Lathe to lower production costs of precision parts. It is especially suited for second operations. Write for Catalog 67-F.

1" Collet Capacity . . . 1-3/8" Spindle Bore . . . 14-1/4" Swing . . . 28-1/4" Turret to Spindle . . . 12 Spindle Speeds . . . 48 Thread Cutting and Carriage Power Longitudinal and Cross-feeds . . . 96 Turret Power Feeds

MODEL 2-H PRECISION TURRET LATHE — equipped with two-speed (2 h.p.-1 h.p.—1800-900 r.p.m.), 3-phase, A.C. motor; handlever collet attachment; and coolant pump assembly.

SOUTH BEND LATHE WORKS
Building Better Tools Since 1906 • South Bend 22, Indiana

If you write maker identify as IEN - 12749

Eyestrain here

used to be a big cost factor for **MONROE**

These little plunger pins locate the dials on the Monroe LA Desk Calculator. Each has a 90° cone point that fits into a detent of 110° included angle.

Previously, binocular microscopes were used to check cone angle, length, roundness, and diameter of these pins. But, the inspectors had to spend considerable time just resting their eyes—and running up the cost of the reliability that Monroe customers expect.

Now the microscopes and eyestrain are gone—the pins are checke' on the Kodak Contour Projector, Model 3. More · ·h the unique Surface Illuminator, inspectors able to check surface finish on the cone tip of the plunger at 50×, to make sure of free movement and positive stopping of the calculator dials.

A battery of Kodak Contour Projectors, Model 3, are inspecting large volumes of complex parts for Monroe. By optical gaging, inspection time has been brought down from an average of 50 seconds per piece to 12 seconds per piece. If you'd like to see such economies effected in your quality control program, we suggest you send us sample parts and specifications. Eastman Kodak Company, Industrial Optical Sales Division, Rochester 4, N. Y.

the KODAK CONTOUR PROJECTOR

Optical Gaging

A new sound movie shows how to simplify complex inspection problems. We'll tell you how to get it for a showing.

Kodak

If you write maker identify as IEN - 12751

SCHRAMM
SMALL INDUSTRIAL COMPRESSORS

Positive controlled force-feed oiling to every wearing surface.

Main Bearings—Tapered roller bearings. Crankshaft supported at both ends.

Larger radiation fins.

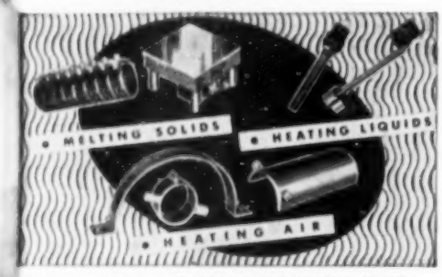
SIZES—½ HP to 5 HP. MOUNTINGS—Horizontal or vertical air receivers or on base. DRIVES—Electric motors or gasoline engines.

WRITE FOR CATALOG GC-52.

SCHRAMM, INC.
The Compressor People
WEST CHESTER • PENNSYLVANIA

If you write maker identify as IEN - 12752

IF YOUR PRODUCT CALLS FOR ELECTRIC HEAT . . .



. . . there's a *WATLOW HEATING UNIT* DESIGNED FOR YOU!

Wherever the job calls for dependable, efficient, clean controlled heat—there's a Watlow Heating Unit of the right size, shape and capacity to do the job faster and better.

Consult Us for Your Special Heating Problems • A blueprint or pencil sketch of your next tough job will bring our prompt recommendations and quotations, without obligation.

WRITE for FREE CATALOG — strip, band, cartridge, immersion units.

WATLOW Since 1922—Designers and Manufacturers of Electric Heating Units
ELECTRIC MFG. CO.
1370 FERGUSON AVE.
SAINT LOUIS 14, MO.

If you write maker identify as IEN - 12753

this WALL CHART can SAVE MONEY for you!

Here's a brand new wall chart guide to selecting hardfacing rods that can help you beat the high cost of wear! Lists over 50 common hardfacing applications . . . recommends the rod to use . . . shows the available sizes and preferred method of application.

If you have a problem of wear caused by impact, abrasion, heat or corrosion, AMSCOATING with Amsco Hardfacing Products can save money for you . . . and this new wall chart tells you where and how!

Write for your free wall chart today!

AMERICAN Brake Shoe COMPANY — AMERICAN MANGANESE STEEL DIVISION
415 EAST 14th STREET • CHICAGO HEIGHTS, ILL.

NEW LITERATURE

Brief reviews to advise you of available new information published by the manufacturers covering products they offer for your use. Each includes identification, size of the material, information it contains so you can judge its value to you.

ACCUMULATORS . . Hydraulic units that operate on a compressible gas-filled bladder principle; picture examples, notes on use. Bulletin, "Accumulators", 4 pages. Greer Hydraulics Inc., 464 18th St., Brooklyn 15, N. Y. **IEN-01143**

ADHESIVES . . Two-page recommendation chart listing adhesives to use on products from aluminum to wood, also a bonding chart. Bulletin 1, 4 pages. Miracle Adhesives Corp., 212-16 E. 53rd St., New York 22, N. Y. **IEN-01144**

BENDING . . Hand and power machines to bend tube and sheet, also shearing, punching, notching, rolling machines; equipment, accessories. "DiAcro" Catalog, 32 pages. O'Neil-Irwin Mfg. Co., 547 Eighth Ave., Lake City, Minn. **IEN-01145**

BRAZING . . Silver brazing alloys in wire, strip, rod and preformed shapes; properties, price tables, also brazing shims for carbide tools. Catalog pages, 8 sheets. Tricon Mfg. Co., 8906-10 Wallace St., Chicago 20, Ill. **IEN-01146**

CALCULATING . . "Univac" electronic computer for statistical work; components, examples of use as in material control. Booklet EL-109, 22 pages. Remington Rand Inc., 315 Fourth Ave., Rm. 1618, New York 10, N. Y. **IEN-01147**

CARBON PARTS . . For mechanical applications such as bearings, seal rings; grades, properties, attachment methods, uses, electrical parts. Bulletin 52, 36 pages. Pure Carbon Co., 208 Hall Ave., St. Marys, Pa. **IEN-01148**

CASTINGS . . Made by the investment process; picture steps from pattern making to inspection, typical parts. "Pour Yourself Precision . .", 12 pages. Precision Metalsmiths Inc., 1079-83 E. 200th St., Cleveland 17, Ohio **IEN-01149**

CLEANING . . Floor sweeping machine that combines brush and vacuum action, 28-in. spread; specifications, side brush. "Commander Moto-Sweeper", 4 pages. Moto-Mower Co., 4611 Woodward Ave., Detroit 1, Mich. **IEN-01150**

CLEANING . . Silicate materials selection chart and instructions for cleaning parts, equipment, floors, clothing. "Solving Cleaning Problems", 12 pages. Philadelphia Quartz Co., 1131 Public Ledger Bldg., Philadelphia 6, Pa. **IEN-01151**

CLEANING . . Information on dermatitis, recommendations on company's cleaning and disinfecting materials by industry. "Control of Dermatitis", 28 pages. West Disinfecting Co., 62-18 West St., Long Island City 1, N. Y. **IEN-01152**

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12754

BONDED
NO NAILS CAN PROTRUDE
PREMIUM PALLET
NATIONAL

A NEW Pallet by the Nation's Largest Pallet Manufacturer

An important new advance in a BONDED pallet—kiln-dried before being glued to insure stronger, trouble-free service. No warping, no splitting, countersunk nails cannot protrude to damage bagged goods. Made to your order in all pallet styles, exclusively by NATIONAL PALLET CORPORATION.

Send for complete information and prices.

NATIONAL PALLET CORPORATION
14th FLOOR • OLIVER BLDG. • PITTSBURGH 22, PA.
Representatives in All Principal Cities

If you write maker identify as IEN - 12755

NEW SKINNER SOLENOID VALVE
EXPLOSION PROOF TYPE X5

THE new Skinner X5 Solenoid Valve is basically the same as the widely accepted and tested V5, but modified to a construction that is Underwriters' approved for Class I, Group D hazardous locations. Small size and lightweight features are retained, and the X5 is low in price because of the many parts which are interchangeable with other Skinner valves. Rating is 10 watts max.; soft, spring loaded seals prevent leakage; internal parts are stainless steel; wide variety of port locations in ⅛" and ¼" size; most types available for metering; for AC or DC in a wide range of voltages and frequencies; can be mounted in any position; supplied as two-way normally open or closed, three-way normally open, closed or directional flow. *Write today for details!*

SKINNER ELECTRIC VALVE DIV.
THE SKINNER CHUCK COMPANY
134 Belden Ave., Norwalk, Conn.

If you write maker identify as IEN - 12756

BARNES

Exclusive GRADIENT HARDNESS

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Pallet type "Walkie" truck 4000 to 6000 lb. capacity.

TO FIT YOUR JOB . .

*Custom Built or . . . Standard Models

Whether your materials handling job requires special applications or is adaptable to standard models, the cost is relatively the same.

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Platform "Walkie" type 4000 to 10,000 lb. capacity.

Hi-lift "Walkie" type 3000 to 4000 lb. capacity.

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LARGEST EXCLUSIVE MANUFACTURERS OF "WALKIES"

NEW LITERATURE — Continued

COMMUNICATING . . Telephone handsets in standard and military types; connections, cord cycle, specifications, microphones. "Handsets", 4 pages. Connecticut Telephone & Electric Corp., 72 Britannia St., Meriden, Conn. **IEN-01153**

COMMUNICATING . . "Femco Audiophone" wired voice communicating equipment for plant and mine service; selection chart, components. Bulletin 26, 4 pages. Farmers Engineering & Mfg. Co., 547-51 Brushton, Pittsburgh 21, Pa. **IEN-01154**

CONNECTORS . . Polarized locking electric-cord plugs, receptacles, line connectors, 2 to 4 wires; construction, dimensions. "Hart-Lock", 8 pages. Arrow-Hart & Hegeman Electric Co., 101-5 Hawthorn St., Hartford 6, Conn. **IEN-01155**

CONNECTORS . . Coaxial-cable units for radio-frequency service; Armed Services designations, dimension drawings, cable assembly instructions. Catalog 101, 20 pages. Dage Electric Co., N. 67th & Meadows, Beech Grove, Ind. **IEN-01156**

CONNECTORS . . Neoprene-jacketed electrical connectors; summary on six shatterproof plug designs, five receptacle styles. Bulletin B-41, 4 pages. Joy Mfg. Co., Connector Div., Dept. R-11, Oliver Bldg., Pittsburgh 22, Pa. **IEN-01157**

CONTROLS . . "Tru-Lay" flexible-cable position controls; standard assemblies, fittings, bend and input load ratings. Folder DH-183, 6 pages. American Chain & Cable Co., 601-A Stephenson Bldg., Detroit 2, Mich. **IEN-01158**

CONTROLS . . Program-control instruments; specifications, cycle examples. Bulletin 1501, strip-chart units; Bulletin 1502, cam operated units, 8 pages each. Brown Instrument Div., 4456 Wayne Ave., Philadelphia 44, Pa. **IEN-01159**

CONTROLS . . Mechanical components for breadboard or prototype models; bearings, blocks, couplings, gears, others. Catalog MDA-200, letterhead request, 20 pages. Servomechanisms Inc., Steward & Post Aves., Westbury, N. Y. **IEN-01160**

CONTROLS . . Flexible-cable position control; instructions for planning a layout, standard units and fitting details, uses. Design Manual AD-311, 12 pages. Simmonds Aerocessories Inc., 103-7 White Plains Rd., Tarrytown, N. Y. **IEN-01161**

CONTROLS . . Electronic temperature control for ovens, furnaces, process equipment, minus 100 to plus 600 deg. F.; circuit, resistance bulbs, uses. Catalog 55, 8 pages. Thermo Electric Co., 2204 Raphael St., Fair Lawn, N. J. **IEN-01162**

CONTROLS . . Small servo motors, induction generators, gear trains; dimensions and electrical characteristics on standard units. "Precision Components", 12 pages. Transicoil Corp., 107 Grand St., New York 13, N. Y. **IEN-01163**

CONTROLS . . Duplicating attachment for machine tool control; description on components, typical setups with work examples. "Duplicators", 16 pages. Turchan Follower Machine Co., 8257-61 Livernois, Detroit 4, Mich. **IEN-01164**

CONTROLS . . "Magamp" magnetic amplifiers; theory, application information, typical units and circuits. Booklet TD-52-600, 16 pages. Westinghouse Electric Corp., 511 Wood St., Dept. IEN, Rm. 1110, Pittsburgh 30, Pa. **IEN-01165**

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REMOVES FUMES—DUST FASTER!

High Quality PRESSURE BLOWER

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KLIXON PROTECTORS

Reports from refrigeration and air conditioning manufacturers show that electrical equipment of all types have less motor burnouts when these motors are equipped with Klixon protectors.

Mr. N. Arthur Spokesburg, Jr. of Wilson Refrigeration, Incorporated says — "We find that by using Klixon protectors on all condensing units, we have a dependable watchman night and day to protect the condensing unit motor from burning out."

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Division of Metals & Controls Corporation
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Improved Method Centrifugal SPRAY DRYER and CONCENTRATOR*

CONTRACT DRYING

We invite inquiries for Contract Drying in our fully equipped, Stainless Steel Plant in Chicago. Shipments can be made direct to our Railroad Switch Track or Truck Docks.

THE DRYING AND CONCENTRATING COMPANY DRYER

Improved method for DEHYDRATING

Solutions, emulsions and materials which can be handled in a liquid form including:

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This complete spray drying plant employs a unique centrifugal-type spray head, and consists of a Drying Chamber, Concentrator, Air Heating Unit, Air Filter, Air Supply Fan, Powder Cooler and Sanitary Pumps with variable speed drives for handling the liquid material and controlling the moisture.

*CONCENTRATOR AVAILABLE SEPARATELY

The Concentrator can be operated as a separate unit for reducing liquid products to almost any desired degree of concentration, almost instantaneously, retaining natural flavors and vitamins.

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HYDRAULIC POWER TOOLS FOR INDUSTRY

HYDRAULIC JACKS

Those sturdy units, with either independent or integral pumps, are useful for many jobs in construction and maintenance. Capacities from 20 to 500 tons.

WIRE ROPE SHEARS

W-S wire, cable and bar shears provide years of trouble-free general service. They are light and portable for convenient on-the-job use.

PORTABLE PIPE BENDERS

Bends standard, extra heavy and double extra heavy steel pipe from ½ in. to 2 in., as well as standard weight pipe up to 3 in. dia. Also solid mild steel bars up to 2 in. dia.

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Single and double plunger types, with reservoirs of different capacities for operating small hydraulic tools, jacks and other hydraulic equipment, and for general hydrostatic testing purposes.

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YORK *Electric & Machine Co., Inc.*
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Makers of BILTWELL•FOREMAN *Axle Shafts for the automotive industry . . . with world wide distribution.*

"WHERE PRIDE OF PRODUCT PREVAILS"

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MAXIM SNOW THROWERS

REMOVE OR LOAD SNOW *FASTER* AT LOWER COST

7.5 h. p. machine clears 874 sq. ft. per minute

Maxim Snow Throwers cut into the snow and whirl it up to 40 feet away in either direction. Three of the four models may be used for truck loading as well. Over 2,000 in use in 32 states — five years winter-proven in actual use.

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NEW LITERATURE — Continued

CONVEYING . . Link chain with free-turning roller top so lumber can be pulled crosswise off the chain; design points, illustrated applications. Folder 2429, 4 pages. Link-Belt Co., 305-9 N. Michigan Ave., Chicago 1, Ill. **IEN-01166**

CONVEYING . . Ball transfers with 50 to 1,000-lb. capacity; suggested uses in handling material and steel plate, mounting patterns. Bulletin BT-52, 4 pages. Mathews Conveyer Co., 191 Tenth St., Ellwood City, Pa. **IEN-01167**

CONVEYING . . Standard components in roller, wheel and power belt conveyors with notes on how to select them, accessories. Bulletin 63-C, 28 pages. Standard Conveyor Co., 64 Indiana Ave., North St. Paul 9, Minn. **IEN-01168**

COOLING . . Mechanical induced-draft counterflow cooling tower; illustrated construction points, selection, performance. Catalog CT-52-4, 36 pages. Foster Wheeler Corp., 165 Broadway, Room 2505, New York 6, N. Y. **IEN-01169**

CORROSION PROOFING . . "Ecnite" lacquer for tanks, ducts, pipe lines, concrete walls; chemical resistance, application instructions, colors. Bulletin 100, 5 sheets. Aqua-Therm Inc., 37-75 N. Torrence St., Dayton 1, Ohio **IEN-01170**

CORROSION PROOFING . . Material to protect cargo holds of ocean freighters; properties, surface preparation, application example. "Protek-Coat", 8 pages. Nox-Rust Chemical Co., 2427-31 S. Halsted St., Chicago 8, Ill. **IEN-01171**

CUTTING . . Form tools for screw machines; sizes and list prices on standard types, blanks, also screw-machine cams and cam rollers. Catalog 9, 12 pages. American Cam Co., 13-17 Flower St., Hartford 1, Conn. **IEN-01172**

DRILLING . . Jig bushings in ASA standard sizes and in the company's extended range; types, drawings, dimensions, dowel pins, ordering data. Catalog 10, 24 pages. Acme Industrial Co., 202 N. Laflin St., Chicago 7, Ill. **IEN-01173**

DRILLING . . Unit assemblies and heads for drilling, tapping, milling in combinations for production work; specifications, typical machines. Bulletin 150-C, 28 pages. Barnes Drill Co., 856 Chestnut St., Rockford, Ill. **IEN-01174**

DRIVES . . Worm-gear speed reducers; picture review on standard designs, literature offer. Mailing folder, "Clevelands Are Still in Style", 4 pages. Cleveland Worm & Gear Co., 3258 E. 80th St., Cleveland 4, Ohio **IEN-01175**

DRIVES . . "Torque-Arm" speed reducers, 1 to 43 hp., output 12 to 330 rpm.; selection tables and instructions, list prices, overload releases. Bulletin A-614-A, 20 pages. Dodge Mfg. Co., 500 S. William St., Mishawaka, Ind. **IEN-01176**

DRIVES . . Floating-type motors and gearmotors for runout table roll drive, 25 to 750 rpm.; assembly drawings to show mounting. Bulletin F-2051, 4 pages. Reliance Electric & Eng. Co., 1111 Ivanhoe Rd., Cleveland 10, Ohio **IEN-01177**

DRIVES . . Hydraulic torque converters, 30 to 600 hp., for gasoline or diesel engines; selection chart with instructions, operation, applications. Bulletin TC-649, 6 pages. Torcon Corp., 1152 W. 5th St., Ashtabula, Ohio **IEN-01178**

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If you write maker identify as IEN - 12768

Investigate LAPPING!
On Metals-Ceramics Quartz and Plastics

Here's What You Can Do With a CRANE LAPMASTER..

With a Lapmaster you can lap different parts in one cycle, lap wide range of parts of different materials in short or moderate production, lap identical parts at tremendous production rates and maintain tolerances to one light band (.0000116"), GET all the facts. Lapping may be the solution to your problem.

Write for free bulletin I.E.N. 52.

JOHN CRANE CRANE PACKING COMPANY
LAPMASTER DIVISION
1815 CUYLER AVENUE • CHICAGO 13, ILLINOIS

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Increase your storage space 40-50%

New Lewis-Shepard Trucks, like this Spacemaster Model "M", right angle stack *in less than 6 foot aisles.* This means the usual 10 to 12 foot aisles can be reduced at least 40% *making extra space for storage.* And, the Model "M" 's unique design permits weight and dollar savings, too! Weighs and costs only *half* as much as standard electric fork trucks. Yet, throughout, it retains the quality construction for which Lewis-Shepard is famous:

1. Greater work-capacity
2. Faster hauling and lifting speeds
3. Safer reverse operation
4. Smoother, timed acceleration
5. Deadman brake for extra safety

Send for detailed information on this and many other L-S Trucks, riding and "walkie" types, for narrow aisle operation.

LEWIS-SHEPARD
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933 Walnut St., Watertown 72, Mass.

Nationwide Service — See "Trucks, Industrial" in your Yellow Phone Book

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TAC Open End Ratchet Wrench
(SOCKET TYPE)

delivers incredible savings wherever "tight" situations prevail involving tubing, pipe, conduit, cable or long studs. Saves at least three ways:

1. **CUTS TIME** on production or maintenance operations because it slips around tubing and down fittings, where you ratchet off or on in mere seconds. Functions perfectly with as little as 7° arc clearance for handle. Reduces workman injury too—TAC can't slip off the work and skin up knuckles.
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3. **REDUCES INVENTORY OF HAND TOOLS** required in your tool crib. Several sockets, a few head sizes, and you eliminate over half the wrenches you'd otherwise maintain.

"BORROW" ONE— PROVE FOR YOURSELF!

Rated companies may request on Letterhead a sample handle, head and socket, for full trial. We ship on memo billing—returnable for full credit. ACT NOW—"BORROW" THIS MIRACLE WRENCH and prove its value!

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TAC **TUBING APPLIANCE COMPANY**
10321 Anza Avenue, Los Angeles, California

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Ames Dial Comparators make the inspection of duplicate parts an extremely simple, rapid and accurate operation. Ames Comparators are strictly impersonal in their accuracy – the results being in no way dependent on the skill or judgment of the operator. The pressure of the gauging members against the work is mechanically determined and therefore uniform.

Check the Ames Dial Comparators shown – one of them may solve a Quality Control problem for you.

Ames No. 1 is an easily adjustable bench model dial comparator that measures objects up to 2" in cross section. This comparator is designated Ames No. 1W when equipped with a dead-weight and contact to ASTM specifications for measuring resilient materials.

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Ames No. 13 features flat-ground, cast-iron base of ample size for using V blocks and locating fixtures. The No. 13 can be fitted with a fine adjustment for close setting. Adjustable bracket holds any Ames Indicator.

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Send us your Quality Control job specifications, and we will supply complete details and proposal without obligation.

Representatives throughout the world — Branches: New York, Chicago, Toronto, Waltham 54, Mass.

B. C. AMES CO.

Mfgr. of Micrometer Dial Gauges • Measurement Dial Indicators

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D + V + X = HYPREZ DIAMOND COMPOUNDS

Formula for finer faster finish

D — **DIAMONDS**—Clean, sharp, particles, uniformly graded to N. B. S. standards, evenly distributed for fast cutting, lapping and polishing.

Valves, Seals Tools, Parts

V — **VEHICLE** — An exclusive formula holding diamonds in permanent suspension, producing finer faster finishes.

X — **EXPERIENCE**—Thousands of the country's most important jobs have proved Hyprez versatility and savings of time, materials and production costs.

Dies, Molds Hobs, Gages

HYPREZ, the original Diamond Compound, is available in types and grades for every finishing requirement. Packed in 18- 9- and 5-gram sealed cartridges for use with the Hyprez Applicator Gun.

Write Dept. E-1152 for complete information or free demonstration

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ENGIS EQUIPMENT COMPANY
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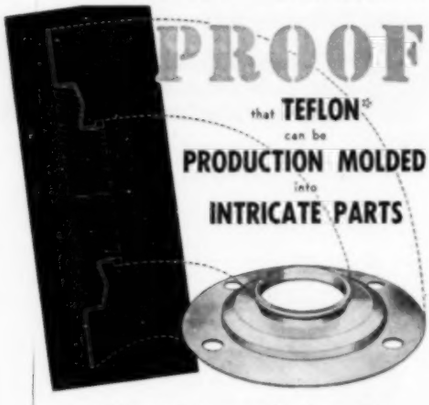

Since its introduction, Teflon's unique qualities have made it desirable for a multitude of applications. The one limiting factor has been the difficulty of production molding Teflon into any but the simplest forms. Sparta has overcome this difficulty.

Bring your Teflon molding problems to Sparta

Sparta has proven that Teflon can now be production molded into shapes far more intricate than had been considered possible. Sparta "know how" is the answer to your Teflon molding problems.

*DU PONT'S TRADEMARK FOR ITS POLYTETRAFLUOROETHYLENE RESIN

SPARTA HEAT TREAT CO.
EAST SPARTA, OHIO — PLASTICS DIVISION

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TESTING . . Temperature cabinet also checks vibration, acceleration

Source: BOWSER TECHNICAL REFRIGERATION
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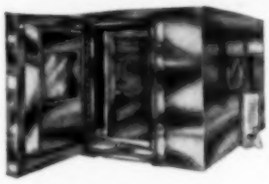

You name conditions

New cabinet, large enough to walk into, has been added to the company's line of environment simulating test equipment. Temperature can be set at any point in a range between minus 100 and plus 200 deg. F. Relative humidity can be simulated between 20 and 95 per cent. Altitude simulation is unlimited.

Equipment includes apparatus to check vibration and acceleration under any desired temperature and altitude conditions. Each cabinet is supplied to meet requirements including the largest Government specifications.

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REFRACTORY . . Graphite impregnated for equipment handling molten metals

Source: BOTFIELD REFRACTORIES CO.
Clymer & Swanson Sts., Philadelphia 47, Pa.

For 2 in. to 4 in. linings

Devil's Putty is a new graphite impregnated plastic refractory material packaged in 100-lb. cartons ready to use. It is cut into slice thicknesses with a spade and then is tamped firmly into place. After drying it is finished with a brush coat of Ladle Wash.

The material is suited to line ladles handling molten **steel,** semi-steel, gray iron and non-ferrous molten metals. It can be applied in spouts, runners, tap hole blocks and cupola breasts. It makes an excellent lining for barrel and rocking furnaces.

Molten metal will not stick to the lining. Slag can rise to the top for easy skinning. Skulls can be removed without taking the lining with them. The material applies as a fillet where bottom brick meet side wall brick in large steel ladles.

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Source: FASTENER CORP
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All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12778

Only the New TYPE "R" MORRIS SLURRY PUMP *has these 4 features*

1. **Gland is under suction pressure only. This feature practically eliminates packing troubles.**
2. **For dismantling, you need remove only four bolts. No internal studs or bolts . . . no troublesome fits or joints.**
3. **You can remove impeller and liner without disturbing piping.**
4. **Shell interchangeable for right or left-hand rotation. Suction and discharge nozzles can be rotated to positions in any of four quadrants.**

The New Type "R" Morris Slurry Pump handles caustic or acid mixtures containing abrasives or solids, also ore concentrates, tailings, slag, residue from filters and classifiers.

Write for specifications and operation data on pumps best suited to your particular needs. No charge or obligation.

MORRIS MACHINE WORKS
Baldwinsville, N. Y.
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MORRIS CENTRIFUGAL PUMPS

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Buffing ? Dust ? Problem ?

Cutaway of Type N Roto-Clone, Arrangement B, with two impellers.

Then you've got a job for the Type N Roto-Clone. This Hydrostatic Precipitator literally scrubs the dust-laden air—removing over 99% of those sticky, linty particles generated by polishing and buffing jacks. There's no secondary dust problem, as collected material is removed as a sludge. Water recirculation without aid of pumps or nozzles cuts both operating and maintenance costs.

For the complete design and performance story on the Type N Roto-Clone, see your local AAF representative or write direct for bulletin No. 277.

AAF American Air Filter COMPANY, INC.
335 Central Avenue, Louisville 8, Ky.
American Air Filter of Canada, Ltd., Montreal, P. Q.
Pacific Division Office, San Francisco, California

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GOOD.....FOR ALL PRESSURES

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YARNALL-WARING CO. 122 MERMAID AVE., PHILA. 18, PA.

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BAKER 360° REVOLVING HEAD *—greatly increases FORK TRUCK utility*

By adding a fourth motion (1 travel, 2 lift, 3 tilt and 4 ROTATION) to a Baker Fork Truck, this attachment can greatly increase the truck's utility on many applications in metal-working, chemical or food processing plants, foundries, paper mills, etc. The most common use is for dumping skid boxes—but rotating heads may be equipped with devices such as clamps for handling drums, paper rolls and other cylindrical objects. Operation is hydraulic, with a single control lever starting, stopping, selecting direction and speed of rotation.

A large electrical manufacturer saves $10,000 per year on scrap disposal operations with this Baker Revolving Head.

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THE BAKER-RAULANG COMPANY
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Baker INDUSTRIAL TRUCKS

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Folding Chair Manufacturer

Bostitch Foot-operated Stapler

A high arm stapler that adapts readily to a wide variety of stapling jobs. Shown here fastening plastic upholstery to chair seat. Also used for carding, assembling wooden toys, fastening wooden drawers, sealing packages of parts. Staples can be formed into a number of shapes. Low model available for seated operator. Easily motorized. Write for complete information on foot and motor operated stapling machines. Bostitch, 651 Mechanic Street, Westerly, R. I.

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fastens it better, AND FASTER, with wire

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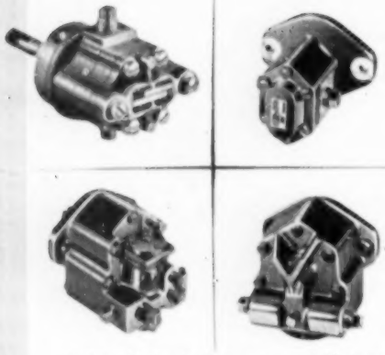
For your hydraulic pump needs ...Choose WEBSTER PUMPS



Webster Hydraulic Pumps are available in capacities ranging from 10 G.P.H. to 10 G.P.M. at pressures up to 1,000 P.S.I. All of the pumps in the line are available with an integral pressure relief valve, if desired.

These pumps are the product of skill acquired during nearly a quarter century of experience, during which they have established an enviable reputation for efficient operation and rugged dependability. You are invited to discuss your pump requirements with Webster engineers. Mail coupon for new Hydraulic Pump Bulletin.

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Established 1909

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Please send me new Bulletin No. N11 on Hydraulic Pumps.
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NEW LITERATURE—Continued

DRIVES . . "Allspeed" variable-speed V-belt tranmission with motor drive, ½ to 7½ hp.; selection tables. Bulletin AS-1600-B6, letterhead request, 16 pages. Worthington Corp., 423 Worthington Ave., Harrison, N. J. **IEN-01179**

DUCT . . Trolley busway to form a movable power source for electric equipment; description on 250 to 500-amp. heavy-duty model, components. Bulletin 27, 4 pages. Feedrail Corp., 123-27 Barclay St., New York 7, N. Y. **IEN-01180**

DUST COLLECTING . . Cleanable air filters based on oil-coated metal honeycomb structure; air-travel diagram, sizes, capacities, maintenance. Bulletin 401-A, 4 pages. Continental Air Filters, Box 1647-A, Louisville 1, Ky. **IEN-01181**

DUST COLLECTING . . Type-AC dust filter; details on continuous-automatic method of cleaning by a reverse air jet, capacities, dimensions. Bulletin 528, 16 pages. Day Co., 808-12 Third Ave. N. E., Minneapolis 13, Minn. **IEN-01182**

ELECTRONIC PRODUCTS . . From antennas to wire recorders; data and list prices on some 18,000 items, also accessories, tools, books. Catalog 131, 236 pages. Allied Radio Corp., 833-35 W. Jackson Blvd., Chicago 7, Ill. **IEN-01183**

EXTINGUISHING . . Catalog information on soda acid, foam, carbon-dioxide, vaporizing-liquid, dry-chemical types, also selection chart, fire chemistry. "Buyers' Guide", 40 pages. Fyr-Fyter Co., 321 Crane St., Dayton 1, Ohio **IEN-01184**

FASTENINGS . . "Rollpin" slotted and chamfered cylindrical spring pin to compress when driven; design principles, suggestions on use. Catalog 800, 16 pages. Elastic Stop Nut Corp., 2328-32 Vauxhall Rd., Union, N. J. **IEN-01185**

FASTENINGS . . "Weath-R-Seal" laminated washer of metal and neoprene, ¾ to 3 in. o.d.; types, properties, uses in roofing, product assembly. Bulletin 513, 4 pages. Fabricated Products Co., 1952 Water St., West Newton, Pa. **IEN-01186**

FASTENINGS . . Set screws in hexagon-head, slotted, slabbed, other types also Zip-Grip self-locking set screws; sizes, list prices, thread data. Catalog 16, 24 pages. Set Screw & Mfg. Co., 5 Main St., Bartlett, Ill. **IEN-01187**

FASTENINGS . . One-piece all-metal locknuts in standard and thin designs; load-carrying capacities, dimensions on aircraft and commercial types. Flexloc Catalog, 26 pages. Standard Pressed Steel Co., Box 555, Jenkintown, Pa. **IEN-01188**

FEEDING . . Rotary units for dry pulverized materials; capacity range on three types, also rotary valves, sectional views on construction. Bulletin F-4, 8 pages. Fuller Co., 952 Fuller Bldg., Catasauqua, Pa. **IEN-01189**

FILTERING . . Traveling-belt self-cleaning filter for liquids; models for coolants and for such uses as paint spray water. "Delpark Filters", 8 pages. Industrial Filtration Co., 528 Industrial Ave., Lebanon, Ind. **IEN-01190**

FLOORS . . Rubber-link floor mat; description on its construction and on its use to collect foot-traffic dirt at a building entrance. "You Don't Walk . . .", 4 pages. American Mat Corp., 1711 Adams St., Toledo 2, Ohio **IEN-01191**

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12785

HOISTING Faultless ENGINEERED TRUCK CASTERS CUT HANDLING COSTS

A fast flowing production line on Faultless Casters produces *more of anything* with less manpower and effort. It's your *practical solution* to cutting handling costs.

200 Series Double Ball Bearing Swivel Plate Caster with Floskite Wheel

H100-V Series Swivel Plate Caster with Grooved Wheel

Regardless of what you handle or make, there is a Faultless Caster especially suited to your job. Wheel diameters range from 2" to 12"—load cap. from 65 lbs. to 9 tons ea.

FAULTLESS CASTER CORP.
Dept. IE-8, Evansville 7, Indiana
Branches in Principal Cities—Canada Factory: Stratford, Ont.

If you write maker identify as IEN - 12786

Protects ANY SURFACE

Your plant and equipment need protection from moisture, acids, corrosion and deterioration to insure economical operation. Ruberoid Rapid Asphalt Paint provides this protection in a hard gloss paint that is easy to apply with brush or spray. Wood, metal, masonry, coated fabrics and other surfaces last far longer when there's an asphalt finish to take wear and abuse. It dries quickly and one application gives lasting service.

Ruberoid Rapid Asphalt Paint is utilized in innumerable equipment, electrical and industrial applications, such as cables, switch boxes, electric motors and generators, boilers and engine rooms, iron grills, fire escapes, damp-proofing concrete, etc. Rapid Asphalt Paint comes in handy drums, barrels and cans in six different sizes from one pint to 55 gallons. For detailed literature, write The Ruberoid Co., 500 Fifth Avenue, New York 36, N. Y.

The RUBEROID Co.
ASPHALT AND ASBESTOS BUILDING MATERIALS

If you write maker identify as IEN - 12787

Aetna

THRUST BEARINGS
for every load, speed and duty

Standard types and sizes for every conventional application involving thrust loads • Specials to 38" O.D., 250 ton capacity • Facilities for microscopy, physical testing and metallurgical laboratory services • 36 years of specialized, high precision manufacturing and engineering experience in the field of ball thrust bearings. Write for catalog.

AETNA BALL AND ROLLER BEARING CO.
4600 Schubert Ave.
Chicago 39

EQUIPPED FOR SIZES FROM 3/8" I.D. TO 38" O.D.

If you write maker identify as IEN - 12788

A HUNDRED WAYS to keep the liquid level where you want it

McDONNELL float-operated devices are made in more than a hundred forms to respond to liquid level movements.

They operate valves to maintain constant levels—constant heads. They operate switches to start and stop pumps, maintain high or low levels, sound high and low level alarms . . . perform just about every imaginable function involving liquid level control.

Pump controller and low level switch—one of many

A wide variation of working pressures, liquid feeding capacities, electrical ratings, and circuits are covered by the many types. The broad range of types and materials make them adaptable to practically all services and design requirements.

Ask for catalog which suggests the many adaptations. Don't manufacture your own float-operated unit until you have gone over the McDonnell line.

McDONNELL & MILLER, INC.
3500 N. Spaulding Ave., Chicago 18, Ill.

Thing One MM Thing Two

High - or low-level switch — many design variations

If you write maker identify as IEN - 12789

WICKWIRE ROPE SLINGS

tough...strong...extra flexible

Wickwire Rope Slings are offered in both braided and conventional types . . . are designed to hitch on to heaviest loads with utmost safety, ease of handling and absolute security of attachments. Where extreme flexibility is required, Wickwire Slings of braided design give definite advantages in non-kinking qualities and in their ability to handle materials of all types and shapes without taking a permanent set.

Let us know your requirements. Our engineers will be pleased to analyze your sling problems and recommend the correct solution.

THE COLORADO FUEL AND IRON CORPORATION — Abilene (Tex.) Denver • Houston • Odessa (Tex.) • Phoenix • Salt Lake City • Tulsa
THE CALIFORNIA WIRE CLOTH CORPORATION — Los Angeles Oakland • Portland • San Francisco • Seattle • Spokane
WICKWIRE SPENCER STEEL DIVISION—Boston • Buffalo • Chattanooga Chicago • Detroit • Emlenton (Pa.) • New York • Philadelphia

WICKWIRE ROPE
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION

If you write maker identify as IEN - 12790

A.C. or D.C. . . . single phase or polyphase . . . induction or synchronous . . . in all ratings and frame types —whatever the need, you can find the one motor best suited to the job in the complete line of Fairbanks-Morse Motors. Call your nearby Fairbanks-Morse electric motor branch for details, or write: Fairbanks, Morse & Co., 600 So. Michigan Ave., Chicago 5, Ill.

FAIRBANKS-MORSE,

a name worth remembering

ELECTRIC MOTORS AND GENERATORS • MAGNETOS • PUMPS • DIESEL LOCOMOTIVES AND DIESEL ENGINES • FARM MACHINERY SCALES • RAIL CARS • HOME WATER SERVICE EQUIPMENT

If you write maker identify as IEN - 12792

DRYING . . Electric oven to process granulated materials on trays

Source: ARTHUR COLTON CO.
3422 E. Lafayette Ave., Detroit 7, Mich.

For batch operation

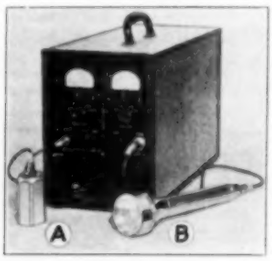
Granular materials, effervescent salts, are loaded on trays to be introduced into this new Model T-4030-E truck type electric oven. It can be equipped with doors at both ends or at one end. It is served by a motor driven blower that draws in fresh air through an intake near the floor. The air is filtered, drawn upward to a heating chamber and then returned downward and horizontally across the tray for uniform recirculation. An exhaust vent in the roof is equipped with an adjustable damper to permit escape of moisture laden air. Electric heating elements are standard design. Indirect gas or steam heating can be specified.

The oven is made of steel shells for the walls, roof and floor mounted on an angle iron structure and fitted with block type Rockwell insulation 2 in. in thickness. Panel joints are packed by hand. Corners of the outer shell are rounded for appearance. Operating ducts are enclosed within the shells. External finish is gray enamel. The interior is sprayed with baking enamel to provide smooth sanitary surfaces. The standard oven accommodates two trucks each mounting 20 trays. Other sizes can be provided to order.

If you write maker identify as IEN - 12793

TESTING . . Electronic instrument detects vibration, locates source

Source: INTERNATIONAL RESEARCH & DEVELOPMENT CORP.
906-10 W. Third Ave., Columbus 8, Ohio



Ask for Vibratron folder

A vibration contact head, indicated at A in the illustration, connects at the front panel of this new Model-652 Vibratron. A stroboscope lamp B connects on the opposite side of the panel which mounts two meters reading frequency and amplitude. The instrument operates on 110-volt 60-cycle ac. and is designed for portable application to check equipment installed in a plant and determine the requirements for balancing.

The pick-up head can be fitted with a prod to reach into difficult positions. It is contacted to a machine where vibration exists while the stroboscope lamp is directed at the machine to pick out the cause for the vibrating action.

In addition to checking installed equipment the instrument can be employed to synchronize machine speeds and as a production balancing unit in connection with a test stand for rotating parts in a speed range between 600 and 40,000 rpm.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

If you write maker identify as IEN - 12794

Cummins BALL•RITE 44

$29.95

BALL•RITE construction is a combination of the finest specs in an industrial tool.
1. **Ball bearings in the right places.**
2. **Always hardened gears.**
3. **Always Cummins double coil motor (the type always used in industrial drills.)**
4. **Always dynamically balanced armature for smooth, flowing power.**

Equals $40 Industrial Quality Drills

Here is a $40 drill in everything but price. Has exclusive Cummins BALL•RITE specs . . . PERM-ALIGN gearing that can't accidentally be knocked out of line . . . super-powered motor that can't be stalled in metal up to ¼-in.; up to ½-in. in wood. *Buy BALL•RITE and buy right!* At your Industrial Supply or Hardware Dealer.

GET THE FACTS— Find out what BALL•RITE means to you. Send for Spec Sheet . . . I-112

Since 1887

Cummins-Chicago Corp.
DIVISIONS
Cummins INDUSTRIALS • Cummins Portable Tools
4740 N. Ravenswood Ave. • Chicago 40, Illinois
IN CANADA: 334 Lauder Ave. Toronto

If you write maker identify as IEN - 12795

Cut Repeating-process Costs With Time Switch Control

- **TSA-14 timer cuts waste, saves money**
- **Gives accurate, uniform operation**
- **Handles cycles from 10 sec. to 8 hrs.**

Contact your nearest G-E sales office.
General Electric Co., Schenectady, N. Y.
621-134

GENERAL ELECTRIC

If you write maker identify as IEN - 12796

Complete Line of HEAD BLOCKS WINCHES COUNTERWEIGHT SYSTEMS

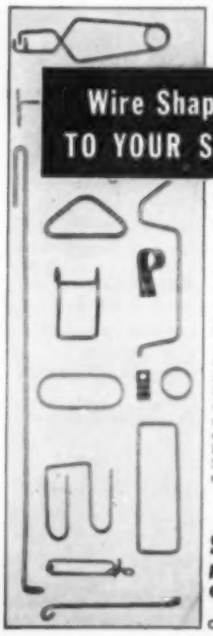
Loads ranging from a few pounds to 40 tons and more must be hoisted and moved quickly and safely on the theatre stage. The complete line of head blocks, hand and motorized winches and counterweight systems — all standard catalog items — which J. R. Clancy, Inc. has supplied for the stage for 76 years is available to meet the many similar requirements of modern industry.

Send for Catalog

Theatrical Equipment Division

J. R. CLANCY INC.
1026 W. BELDEN AVE. SYRACUSE 4, N. Y.

If you write maker identify as IEN - 12797



Wire Shapes and Forms TO YOUR SPECIFICATIONS

- Your wire forms are produced fast, accurately and at low cost with Sommer mass-production methods.

Speedy, automatic plating equipment handles either large or small assemblies. Popular new Zinc Iridite process adds a bright, durable, economical finish.

Sommer offers complete forming, stamping, cut-threading and butt-welding services. Let us work with you in designing and producing any wire shapes or forms needed for your defense contracts. Send sample, blueprint or drawing—see how Sommer can save you time and money.

SOMMER METALCRAFT CORPORATION
300 POSTON DRIVE
CRAWFORDSVILLE, INDIANA

If you write maker identify as IEN - 12798

AA 501

Camachine

SLITTERS AND ROLL WINDERS

If you want fast, low cost production of top-quality rolls of paper, plastics, textiles, rubber, and other plain, coated, laminated or tacky-surfaced materials . . . it will pay you to investigate Camachines!

Bulletin 1010 will be sent on request

26-3A, a popular CAMACHINE featuring differential rewinding and positive roll separation. Rolls produced on the 26-3A are ideal for further processing, or for consumer use.

Cameron Machine Company • 61 Poplar Street • Brooklyn 2, N. Y.

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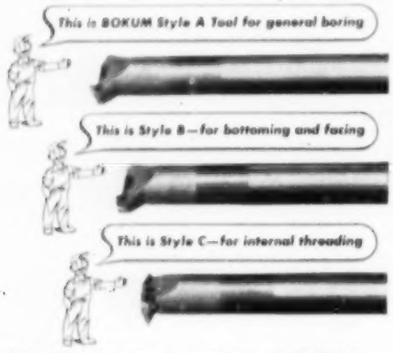

All Bokum tools, assure correct cutting and clearance angles anywhere around periphery of cutting head—throughout their long, long life. They're resharpened on one face only—and provide constant clearance.

Available in:

(1) high speed steel (2) carbide-tipped and (3) solid carbide—in sets to meet your specific needs.

Remember—there's NO HOKUM with BOKUM

Send for Catalog 1139-6

BOKUM TOOL CO.

SINGLE POINT BORING TOOLS · INTERNAL THREADING, BOTTOMING AND FACING TOOLS · CARBIDE TIPPED TOOLS

DEPT. N • 14775 WILDEMERE AVE. • DETROIT 21, MICH.

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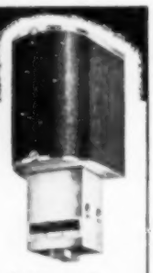
Solenoid VALVES

PILOT VALVES
3-WAY 4-WAY
For operating Master Valves and Small Cylinders



Speed Control VALVE
Controls speed of Air and Hydraulic Cylinders

3-Way and 4-Way VALVES
Pilot Operated
Sizes ¼" — ⅜" ½" and ¾"
Write for Bulletin

AUTOMATIC VALVE CO.
37427 GRAND RIVER AVE., FARMINGTON, MICH.

NEW LITERATURE—Continued

FOUNDRIES . . "Champion" core blowers; specifications on bench and floor models, also core rollover machines; suggestion on core blowing. Bulletin 5000, 28 pages. Beardsley & Piper, 2422-26 N. Cicero Ave., Chicago 39, Ill. **IEN-01192**

FURNACES . . For heating and heat-treating work; illustrated examples of specification furnaces including tube reheating, normalizing types. Bulletin, 4 pages. Flinn & Dreffein Eng. Co., 25-29 E. Monroe St., Chicago 3, Ill. **IEN-01193**

FURNITURE . . Laboratory cabinets in standardized unit design; construction points, models, suggestions on planning and layout. Catalog 25, 28 pages. Fisher Scientific Co., 719 Forbes St., Pittsburgh 19, Pa. **IEN-01194**

GAGES . . Standard thread gages in plug, ring, pipe types; size tables by classes of fit, list prices, tolerances. Dryseal units. Bulletin S6-52, 20 pages. Detroit Tap & Tool Co., 415-A Boulevard Bldg., Detroit 2, Mich. **IEN-01195**

GAGES . . Optical straightedge to locate and measure variations in surface flatness to .00004 in.; diagram, operation, recorder attachments. Catalog 20, 4 pages. F. T. Griswold Mfg. Co., 952 Lancaster Pike, Devon, Pa. **IEN-01196**

GAGES . . "Electrolimit" height gage for gage-inspection, toolroom, shop use; description on construction features, scales, uses. Bulletin 555, 4 pages. Pratt & Whitney, 49 Charter Oak Blvd., West Hartford 1, Conn. **IEN-01197**

GEAR CUTTING . . "Shear-Speed" machine to cut external teeth on a gear by a shaper action; performance examples, specifications. Bulletin 1800-52, 8 pages. Michigan Tool Co., 7169-73 E. McNichols, Detroit 12, Mich. **IEN-01198**

GEAR CUTTING . . Machine for screw threads, lead-screws and worms, 40 to 118 in. in length in three models; description on method, examples. "Cornelis Machine", 8 pages. George Scherr Co., 292 Lafayette St., New York 12, N. Y. **IEN-01199**

GENERATORS . . Motor-generator sets and controls to supply uninterrupted ac. power; operating schematic, components, uses. Bulletin 17, 4 pages. Bogue Railway Equipment, 50-54 Iowa Ave., Paterson 3, N. J. **IEN-01200**

HANDLING . . "Gripper" woven-wire flat sling to handle heavy, crushable and pickling loads; standard units, ratings, selection tables and instructions. Sling Catalog, 16 pages. Cambridge Wire Cloth Co., Vienna Rd., Cambridge, Md. **IEN-01201**

HANDLING . . Equipment to pick up and stack sheared pieces, another to support wide sheets for shear gaging; descriptions. "Free Yourself", 8 pages. Fried Steel Equipment Mfg. Corp., 526-30 E. 119th St., New York 35, N. Y. **IEN-01202**

HARDBOARD . . Booklet of application suggestions for Presdwood in your plant from bins and table tops to spray booths; notes on fabrication. Bulletin 5202, 12 pages. Masonite Corp., 109-13 W. Washington St., Chicago 2, Ill. **IEN-01203**

HEATING . . "Platecoil" embossed-sheet heating and cooling element for pipe-coil service; description, applications, one as a heat shield. Bulletin, 20 pages. Kold-Hold Mfg. Co., 701-5 E. Hazel St., Lansing 4, Mich. **IEN-01204**

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12801

NYLON Twisted-in-Wire BRUSHES for PRECISION CLEANING

High quality work—aircraft standards—faster production—all call for precision cleaning of plain and tapped holes in many parts. There is no easier, faster, cheaper way to *clean holes lint-free* than with a Mill-Rose twisted-in-wire NYLON brush designed for the specific cleaning job. These brushes are saving time and cutting rejects after assembly in countless plants. They range in diameter from .078 up, and in length up to several inches.

Write for Twisted Wire Brush Catalog 56 STANDARD SIZES in Stock

Tell us your cleaning problem — we'll make the brush that will "lick" it. Write today.

HIGH PRECISION INDUSTRIAL BRUSHES TWISTED IN WIRE

The MILL-ROSE Company 7995 EAST 59th STREET CLEVELAND 5 OHIO

If you write maker identify as IEN - 12802

Darnell Casters

Always SWIVEL and ROLL

DARNELL CORPORATION, LTD.
DOWNEY, (Los Angeles County) CALIF.

60 Walker Street, New York 13, N.Y.
36 North Clinton, Chicago 6, Illinois

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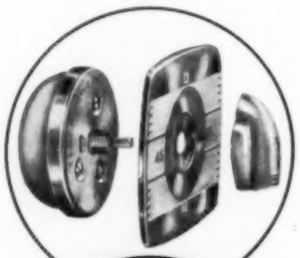

MARK-TIME "2000" Bell Timer

a favorite for dependability & economy!

Hundreds of the country's leading manufacturers of ranges, washing machines and similar appliances have standardized on "2000" . . . because no other bell timer gives such rugged dependability at so little cost!

"2000" is perfect for any device or appliance where a clear, resonant bell signal is required at the end of a pre-set, measured time interval.

Durability is built into "2000" . . . its simple, trouble-proof operation has earned its outstanding popularity.

Available with a wide variety of modern dials and knobs. Write today for full details and prices.

SPECIFICATIONS

Standard timing ranges from 60 seconds to 5 hours. Normally supplied with center stud mounting. Other mountings available on request. May be supplied with winding shafts of various types.

Manufactured and sold in Canada by SPERRY GYROSCOPE OTTAWA, Limited 3 Hamilton St., Ottawa, Ontario, Canada

MARK-TIME

M. H. RHODES, INC.
HARTFORD, CONNECTICUT

If you write maker identify as IEN - 12805

Spray THIS aluminum *without spatter!*

Background surfaces are not spattered or marred when you spray with

ROYLAC ALUMINUM

Due to special vehicle and solvents, this protective coating dries in motion to a cottony, non-adherent powder at about four feet from the spray gun.

But the surface you WANT to protect receives a superior, corrosion-resistant and tightly bonded film, with a bright aluminum finish, particularly effective exposed to acid-type fumes, salt or moist air.

Roylac Aluminum is plasticized to provide a film of good flexibility and bonding tack, effective for sealing porous surfaces. With its non-reactive vehicle, Roylac is excellent on galvanizing, steel and other basic metals. It is accepted as an economical, fast-drying product finish coat. It covers up to 800 square feet per gallon and dries to a tack-free film in 12 minutes. Also easily applied by brush.

Photo made the day after spray-coating with Roylac Aluminum. Note absence of spray on grass.

Free test sample, specifications and prices on letterhead request.

ROYSTON LABORATORIES, INC.
P. O. Box 112, Blawnox, Pa.

ROYLAC

If you write maker identify as IEN - 12806

Sticky, Gummy Materials *CAN* be pumped!

ADHESIVES
PUTTIES
SEALERS
HEAVY COATINGS

YOU CAN handle an amazing variety of heavy industrial fluids and semi-solids with Graco Powerflo Pumps! Air operated, they work in any location, pumping out of pails or 400 lb. original drums. Hoses, flow guns, spray guns, nozzles available. Tell us what your heavy material is, and we'll tell you frankly what savings Powerflo can make. We have some interesting case histories. Write now for free Powerflo catalog.

GRAY COMPANY, INC.
112 Graco Square
Minneapolis 13, Minnesota

GRACO
Powerflo pumps

Regional Offices: New York, Philadelphia, Detroit, Chicago, Atlanta, San Francisco

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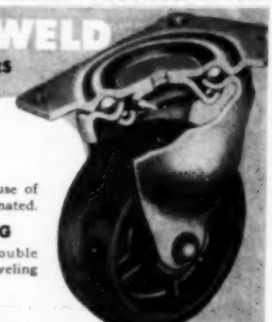
NEW CONSTRUCTION

LOCK-WELD
SWIVEL CASTERS
(Patented)



NO KING PIN
the greatest single cause of caster failure is eliminated.

EASIER SWIVELING
rigid alignment of double ball race increases swiveling efficiency.

SUPER STRENGTH
projection welded assembly, no wear between moving parts. Patented leg design prevents bending and buckling.

SERIES 33
PRESSED STEEL
SWIVEL CASTERS
SIZES 4"-6"

(SINGLE BALL RACE CASTERS—SERIES 31—SIZES 2"-6")

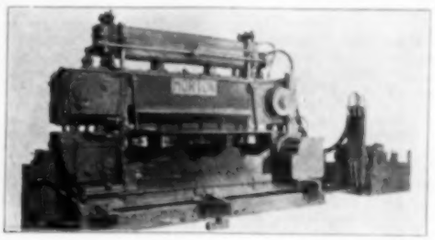
THE **Fairbanks** COMPANY
393 LAFAYETTE STREET • NEW YORK 3, N.Y.
Branches: New York 3 • Pittsburgh 22 • Boston 10 • Rome, Ga.

VALVES • BART & PIC UNIONS • TRUCKS • FASTENERS

If you write maker identify as IEN - 12808

SHAPING . . Multi-cutter machine trims weld joining ends of steel strip

Source: MORTON MFG. CO.
Hoyt & Broadway, Muskegon Heights, Mich.



Special assembly for strip steel mill

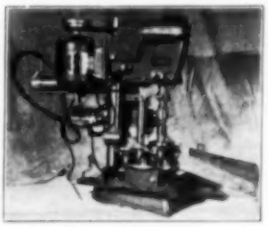
Flash Trimmer is a new special assembly of hydraulic positioning and clamping and motor driven chain connected cutter heads. The machine installs in a rolling mill line where lengths of steel strip are joined to be run continuously through a pickling and washing process for scale removal. The new machine is positioned in the line following the welding operation and the strip is forwarded through it until the weld comes in approximately correct location.

Upper and lower heads are traversed hydraulically for exact positioning and the work is clamped by operating vertical hydraulic controls. As soon as the clamping action is completed a motor is started to operate chains connecting to the five heads on each face of the sheet so the tools carried in these heads will be drawn along the weld line to trim off the flash. Clamping action is then released, the heads are retracted and the motor is reversed to return the tools to starting position for the next weld. Strip thickness capacity ranges from 0.056 to 0.250 inch. Other sizes can be trimmed with special cutters and clamping dies.

If you write maker identify as IEN - 12809

MACHINING . . Drilling machine tooled for special automatic operation

Source: KETCHPEL ENGINEERING CO.
1403 Palisade Ave., West Englewood, N. J.



Standard components

The company has developed a new combination of standard components, including a drilling machine, indexing table, electric controls and pneumatic operation. It applies for automatic machining, at one or more stations, with air ejection for chips and scrap in one direction and work in another. The assembly can include an inspection station that will safeguard the machine against work incorrectly positioned by the operator whose activities are limited to work insertion and observation of the machine cycle. Each machine is tooled and controlled for specified operations to include drilling, turning, boring, punching, inspection, as required.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12810

9 lb. baby with a ton bite

Burndy's Y34A Hypress, easily portable at 9 lbs., develops 18,000 lbs. of force hydraulically for installation of Hydent connectors on #6 Str. thru 500 Mcm cable.

Ask your Burndy Distributor

BURNDY
NORWALK • CONNECTICUT

If you write maker identify as IEN - 12811

ENGRAVING • PROFILING

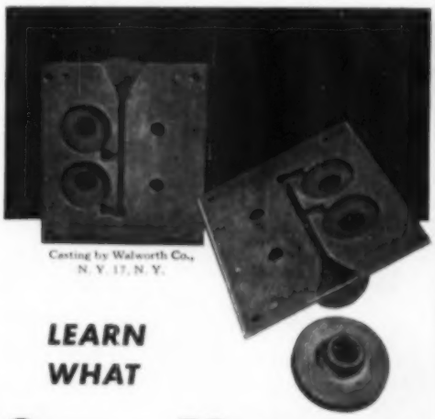
for heavy production

Engravograph TM

Write for literature describing:
1. Heavy Duty model (as illus.)—Catalog H23
2. Portable models—Catalog IM23

NEW HERMES, Inc.
13-19 University Pl. N. Y. 3, N. Y.

If you write maker identify as IEN - 12812



Casting by Walworth Co., N. Y. 17, N. Y.

LEARN WHAT

SHELL MOLDING

means to your operations

When you design ferrous and non-ferrous metal parts, be sure your plans take the *shell molding* process into consideration. This new method of foundry casting can bring real economic benefits. For instance,

- **Pieces are cast to closer finished dimensions—tolerances as close as .003 to .005 inches per inch.**
- **Less machining means lower production costs.**
- **Castings have almost pattern-smooth surfaces.**
- **Higher percentage of sound, uniform castings results in fewer rejects.**

Thin, lightweight shell molds made of fine-grained sands bonded with BAKELITE Phenolic Resins are the feature of this process. Your foundrymen can tell you how it can serve your needs. Write Dept. EN-14 for information on the BAKELITE Phenolic Resins developed expressly for shell molding.

BAKELITE
TRADE MARK
PHENOLIC RESINS FOR SHELL MOLDING

TRADE MARK

BAKELITE COMPANY
A Division of Union Carbide and Carbon Corporation
UCC
30 East 42nd Street, New York 17, N. Y.
In Canada: Bakelite Company (Canada) Ltd., Belleville, Ont.

If you write maker identify as IEN - 12814

Keep Lubrication Fittings Clean

Here's a tip that will help cut maintenance costs and prolong bearing life . . . use these inexpensive flexible plastic caps on your lubrication fittings. They'll keep the fittings free from the dirt and grit that's often forced into the bearings when the grease gun is applied. The caps can be slipped on and off with ease — and once on, won't shake loose. They're also unaffected by oil, grease or water.

Sizes for Hydraulic, Button Head or ⅛" Dot Type Fittings. Order a supply.

BULLETIN P-5103 has details. Ask for a copy.

THE S.S. White PLASTICS DIVISION
DENTAL MFG. CO. Dept. HP, 10 East 40th St. NEW YORK 16, N. Y.

WESTERN DISTRICT OFFICE: Times Building, Long Beach, California

If you write maker identify as IEN - 12815

50,000 Razor Blades READY FOR SHIPMENT ... in a minute!

HERE'S HOW. with Stanley Steel Strapping! Like hundreds of other prominent manufacturers, the Pal Blade Company of Plattsburg, New York depends on the Stanley Steel Strapping System for the safe, economical protection of products in transit. Result: one man securely fastens 50,000 PAL or PERSONNA razor blades in one case . . . all ready for shipment . . . in a minute!

HERE'S THE POINT. With Stanley Steel Strapping, you can quickly and easily protect *whatever* you ship against rough treatment, damage or pilferage en route. Your bales, boxes, cases and cartons can be neater . . . tighter. Your packaging and shipping departments can do a better job, faster. In fact, by combining the Stanley Steel Strapping System with other modern shipping methods, you can save time, money, and materials in shipping almost any product . . . any distance. The complete System includes strapping, seals, tools, reels and accessories — *everything* for your application!

WHY NOT TRY IT and see for yourself? Mail the coupon today.

Invite the Stanley Man to Call

Branch Offices or Representatives in 32 Principal Cities.

STEEL STRAPPING AND CAR BANDING SYSTEMS

STANLEY

Reg. U.S. Pat. Off.

HARDWARE • TOOLS • ELECTRIC TOOLS • STEEL STRAPPING • STEEL

THE STANLEY WORKS, Steel Strapping Division
204 Lake Street, New Britain, Connecticut.

Please ask your representative to call and explain the advantages of the Stanley Steel Strapping System to me.

Name
Firm Name
Street
City State

NEW LITERATURE — Continued

HEATING . . Submerged combustion equipment to heat and agitate pickling solutions; sectional installation view and description. "Submerged Combustion", 4 pages. Ozark-Mahoning Co., 752 Industrial Blvd., Tulsa 1, Okla. **IEN-01205**

HEATING . . Gas-burning space heating equipment; data summaries on unit heaters, room and central units, duct furnaces; installation information. Catalog GN-52, 20 pages. Reznor Mfg. Co., 300 James St., Mercer, Pa. **IEN-01206**

HEATING . . Vertical and horizontal unit heaters; capacity tables, dimensions, location suggestions, wiring diagrams, calculation data. Bulletin A-365, 16 pages. U. S. Radiator Corp., 300-A Buhl Bldg., Detroit 31, Mich. **IEN-01207**

HOSE . . Rubber and rayon or wire-braid hose for pressures from 250 to 6,000 lb.; sizes, ratings, fittings, hose-and-fitting assemblies. Catalog 52, 24 pages. J. N. Fauver Co., 45 W. Hancock Ave., Detroit 1, Mich. **IEN-01208**

INSULATING . . "Styrofoam" plastic-foam low-temperature materials; installation instructions for rooms, floors, ceilings, roofs, equipment. Booklet PL-202, 24 pages. Dow Chemical Co., 913-17 Jefferson Ave., Midland, Mich. **IEN-01209**

LATHES . . Summary on toolroom, hand turret, cabinet-mounted units, also internal and universal grinders; specifications. Bulletin 500-F, 8 pages. Rivett Lathe & Grinder Inc., 20-24 Riverview Road, Brighton 35, Mass. **IEN-01210**

LAYOUT . . Scale-size models of machine tools, shop equipment, conveyors, trucks, others; descriptions, list prices. Catalog, 26 sheets. Visual Production Planning, Leisenring Ave. & 6th St., Connellsville, Pa. **IEN-01211**

LIGHTING . . Lamp guards in portable and stationary types, vaporproof models, lamp sockets, Levolier switches; descriptive data, uses. Catalog 49-A, 40 pages. McGill Mfg. Co., 100 N. Lafayette St., Valparaiso, Ind. **IEN-01212**

LUBRICATING . . "Molykote" molybdenum-disulphide as a lubricant for internal-combustion engines; description, list prices and standard packaging. Folder 16, 6 pages. Alpha Corp., 177-81 Hamilton Ave., Greenwich, Conn. **IEN-01213**

LUBRICATING . . Molybdenum-disulphide materials for use in extreme-pressure applications; properties and forms available, notes on specific uses. "Anti-Seize", 4 pages. Bel-Ray Co., 49 Green Village Road, Madison, N. J. **IEN-01214**

LUBRICATING . . Metering-type lubricators for built-in use; application examples on a screw machine and a wrapping machine. Bulletin NB-9, 4 pages. Bijur Lubricating Corp., 149-53 W. Passaic, Rochelle Park, N. J. **IEN-01215**

MAGNETS . . Hipernik, Hipernik V, Conpernik, Hiperco magnetic alloys; properties, application suggestions, forms. Bulletin 52-100, 8 pages. Westinghouse Electric Corp., 511 Wood St., Dept. IEN, Rm. 1110, Pittsburgh 30, Pa. **IEN-01216**

METALS . . Fabricating information on Rigid-Tex design-strengthened metal sheet including welding, forming, punching; properties, patterns. Folder DR-852, 6 pages. Rigidized Metals Corp., 664-P Ohio St., Buffalo 3, N. Y. **IEN-01217**

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12817

If you write maker identify as IEN - 12818

GOOD LOOKING!

more eye appeal in products made with

MASONITE PRESDWOOD

They take smooth, durable finishes of all types, and hold them fast. They take laminations, veneers, printed designs and many special effects. They're easy to fabricate, and you can even bend them to graceful, flowing curves.

These are just a few of the 28 distinct advantages of all-wood Masonite Presdwood.® 39 different types and thicknesses of hardboard to serve you.

Give you any ideas? For complete technical data and suggestions on solving your production problems, *write*—

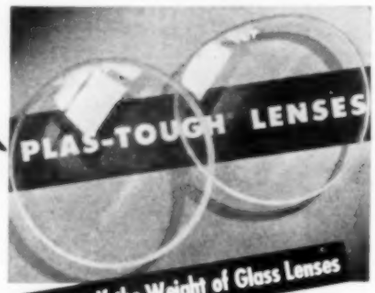
MASONITE® CORPORATION
DEPT. IEN-11, BOX 777
CHICAGO 90, ILL.

"Masonite" signifies that Masonite Corporation is the sponsor of the product

BETTER HARDBOARDS FOR BETTER PRODUCTS

If you write maker identify as IEN - 12819

New WILLSON®



Only Half the Weight of Glass Lenses

- 6-Curve—50 mm. Round
- 6-Curve—P3 Drop Oval—44 and 47 mm.

Add extra comfort to your safety goggles and spectacles with these lightweight, extra tough plastic lenses. Improved surface hardness gives unusual resistance against pitting, scratches, abrasion and many industrial acids that would mar ordinary plastics. Plas-Tough® lenses meet Federal Specifications for impact resistance and light transmission. Replace with Plas-Tough®!

Write for Descriptive Folder

WILLSON PRODUCTS, INC.
217 Washington Street • Reading, Pa.

If you write maker identify as IEN - 12820

Widen the Range of your Plant Cleaning

2 NEW Sizes! HOFFCO-VAC Heavy-Duty, Portable VACUUM CLEANERS

Bigger Capacity and Higher Vacuum for Cleaning Larger Areas of Walls, Floors and Overhead Surfaces at Lower Cost!

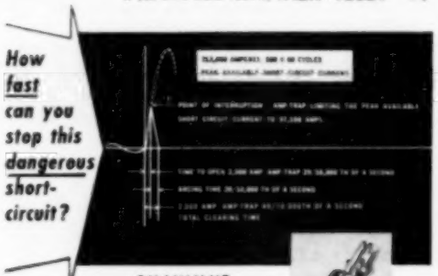
Hoffco-Vac 15 Operates 35-foot length of hose.

Hoffco-Vac 30 Operates 50-foot length of hose.

AIR APPLIANCE DIVISION

U.S. HOFFMAN MACHINERY CORPORATION
103 Fourth Ave., New York 3, N. Y.
Canadian Plant: Canadian Hoffman, Newmarket, Ont.

If you write maker identify as IEN - 12821



SHAWMUT

Amp-trap

The available short-circuit current showing here is rising at the incredible rate of 35,000,000 Amperes per second. If unchecked, it can reach 212,000 Amperes at the peak of the first current loop. An explosive sledge-hammer blow of destruction can result.

A 2000 Ampere normal rating *Amp-trap* limited the peak available short-circuit current to 97,100 Amperes, or 46% of the 212,000 Amperes available. It did this in 29/10,000th of a second. The total fault clearing time was 49/10,000th of a second. Thus did Amp-trap stop this explosive short-circuit long before real destruction could occur.

Lightning fast *Amp-trap* not only prevents Supercurrents from building up to full magnetic or thermal destructive force — it actually destroys them.

Amp-trap gives Protection Engineers, Switchgear Designers, Contractors and Users new freedom and flexibility in laying out low voltage systems. Available in all standard sizes *Amp-traps* may be used with or without circuit breakers. Write for bulletins.

AMP-TRAPS — *"Murder At The Switch"*

THE CHASE-SHAWMUT CO.
396 MERRIMAC STREET · NEWBURYPORT, MASSACHUSETTS

If you write maker identify as IEN - 12822

NORTON BRINGS YOU
MORE types of abrasive products...for MORE savings ...on MORE jobs

You're sure to find the right answers to every one of your grinding problems in Norton — the world's most complete line of abrasive products.

For over 50 years Norton abrasive products have been giving on-the-job proof of top quality and top performance — and their proving ground is all industry. And that means not only Norton grinding wheels but segments, bricks, sticks, mounted wheels and points, polishing grain and tumbling abrasive as well.

Ask Your Norton Distributor

about Norton abrasive products for every grinding job, from rough grinding to the most delicate precision lapping. He'll see that you get the products — and the service — that will save you time, work and money. NORTON COMPANY, Worcester 6, Mass. Distributors in all principal cities. *Export:* Norton Behr-Manning Overseas Incorporated, Worcester 6, Mass.

NORTON
ABRASIVES
Making better products to make other products better

If you write maker identify as IEN - 12824

DRILLING . . Multiple head machine to drill and thread circular work

Source: BEAVER MACHINE & TOOL CO.
201-5 Edison St., Syracuse 4, N. Y.

A special assembly

Illustrated is special assembly to specification of five Locke motor driven drilling and tapping heads arranged with their driving motors around a centrally located work fixture on a supporting pedestal. Each head employs air pressure for the feed with feed rate controlled by hydraulic fluid passing through an adjustable port. The motors rotating the spindles rate ½ hp. Control centers at a set of solenoid switches so all of the heads advance and retract together. The company is prepared to supply similar equipment assembled and tested to perform specified machining operations on a given piece of work.

If you write maker identify as IEN - 12825

MELTING . . Electric pot for silver solder, rheostat control

Source: TARTAK-STOLLE ELECTRONICS, INC.
3968-72 S. Grand Ave., Los Angeles 37, Calif.

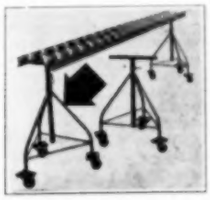
List price is $60

The electric element employed to heat the crucible in the company's new Hi-Temp dip pot operates at 26 volts. Rheostat control is through a transformer enclosed with the crucible in a rectangular housing. Operation is protected by a 5-amp. fuse. Overall housing dimensions are 8½ by 12¾ by 10¾ inches. Weight is 32 pounds. The rheostat control knob is mounted in the housing face to set desired temperature to the maximum required to melt and hold silver solder. The crucible is not subject to cracking on temperature change. It has a working life of 300 or more hours. Crucible replacement after a considerable service period costs $17.

If you write maker identify as IEN - 12826

CONVEYING . . Portable stand adjustably supports gravity conveyor

Source: SPEEDWAYS CONVEYORS INC.
1244 Niagara St., Buffalo 13, N. Y.



T-shaped upright, made of tube in welded assembly, is mounted in a central socket for vertical adjustment in this new wheel mounted conveyor support stand. The wheels measure 3 in. in diameter and are made of hard rubber. The stand is available for specified conveyor widths, height adjustment, load capacity.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12827

GARLAND RAWHIDE HAMMERS

Compare These Features With Any Other Hammer!

1 A constant tight fit of the rawhide face, without the use of glue or shellac. The first blow forces the pronged disc (A) into the back of the rawhide plug (B), expanding it to fit securely to the slightly larger inside diameter of the shell (C).

2 Removal of worn rawhide faces is easy and quick. Simply insert a chisel or heavy screwdriver in slot, give it a tap, and out come the disc and worn plug.

Made of resilient water buffalo hide, the toughest rawhide known.
Free folder lists sizes, weights, prices of Garland rawhide hammers, replacement faces, and mallets.

GARLAND MFG. CO., Saco, Maine
Mfrs. of Rawhide Hammers, Mallets, Loom Pickers

If you write maker identify as IEN - 12828

ROLLED STEEL PIPE FLANGES

for all types of service

INQUIRIES INVITED
STANDARD STEEL WORKS DIVISION
BURNHAM, PA.

BALDWIN-LIMA-HAMILTON

General Offices: Philadelphia 42, Pa. Offices in Principal Cities

If you write maker identify as IEN - 12829

Variable Speed Control for Light Machinery

Costs only a trifle — brings amazing results

Converts a constant speed motor to a variable speed drive . . . fits on standard motor shaft. Provides accurate, positive speed changes while the machine is running. With a turn of handwheel, you get exactly the right speed for every job under every changing condition. Sizes from ⅛ to 1½ hp—$7.50 and up. Write for Bulletin IN 66b-J.

Reeves Pulley Company • Columbus, Ind.
REEVES *Variable Speed Control*

If you write maker identify as IEN - 12830

SLASH YOUR COSTS OF THREADING PIPE!

OSTER

HIGH SPEED PIPE MACHINES

Reduce your costs of threading and cutting pipe with Oster "RAPIDUCTION" machines. Model No. 6-A covers the 1" to 6" pipe range and the 1" to 4" bolt range. Model No. 8 has a standard pipe range of 2½" to 8".

A single, quick-opening, adjustable die-head, with one set of holders, covers the entire range of each machine. Write for free catalog bulletin "LIST NO. 9-C" which explains Oster "RAPIDUCTION" features.

THE OSTER MFG. CO.
2053 EAST 61st STREET
CLEVELAND 3, OHIO

If you write maker identify as IEN - 12831

LOW COST POWER TRANSMISSION

WRITE FOR BULLETINS

FOOTE BROS.
FOOTE BROS. GEAR AND MACHINE CORPORATION
4545 WESTERN BOULEVARD CHICAGO 9, ILLINOIS

If you write maker identify as IEN - 12832

Air Motor and Arbor Stand Make Light Duty Air Press

A SIMPLE, inexpensive arbor stand, combined with any one of four Bellows Air Motors, makes a compact, versatile, bench air press . . . suitable for regular production work or emergency use. Does the work of expensive standard air presses. Throat clearance 5". Table 6" x 9". Ram clearance 6". Arbor Stand can be bought separately or equipped with any one of four different sizes of Bellows Air Motors.

Write for Bulletin MS-5 today. Address: The Bellows Co., Dept. IEN-1152, Akron 9, Ohio.

The Bellows Co.

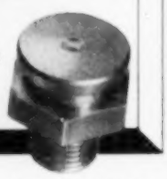
AKRON 9, OHIO

1509

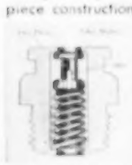
If you write maker identify as IEN - 12833

A NEW UNIVERSAL DEVELOPMENT

Giant Buttonhead Grease Fittings with One-Piece Construction!



To solve a problem, Universal Giant Buttonhead Fittings bring a design new to the field. Their one-piece construction prevents the leaking possible with conventional two-piece buttonhead fittings which can be separated by extreme pressure or jolting.



CROSS SECTION

Universal Giant Buttonhead Fittings are stronger, longer-wearing, abuse-resisting. A rugged steel inner-spring combines with a fiber sealing washer to prevent grease leak-back. Check your machinery. Wherever a conventional two-piece grease or oil fitting is vulnerable to being knocked apart by a jolt or high pressure, that's the place for Universal.

Discover more about these revolutionary new one-piece giant buttonhead fittings. They come in all regular sizes. Write now for complete information.

UNIVERSAL LUBRICATING SYSTEMS, INC.

785 Allegheny Avenue • Oakmont, Pennsylvania

NEW LITERATURE—Continued

METERS . . "Kennison Nozzle" for partially-filled liquid lines instead of venturi or orifice meter; selection and application. Bulletin 135-J5. 8 pages. Builders-Providence Inc., 345 Harris Ave., Providence 1, R. I. **IEN-01218**

METERS . . For gas, gasoline, oil, LPG, water; types, sizes, condensed specifications; also gas pressure regulators. Nordstrom valves. Bulletin C-5000-5. 24 pages. Rockwell Mfg. Co., 402 N. Lexington Ave., Pittsburgh 8, Pa. **IEN-01219**

MIXING . . Liquid-agitating and processing vessels: data on impellers, kettles, autoclaves, dimension drawings, agitator drives. Bulletin 58-W. 16 pages. Struthers Wells Corp., 1001-5 Pennsylvania Ave., Warren, Pa. **IEN-01220**

MOTORS . . "Verticlosed" vertical units for deepwell pumps, 1½ to 400 hp.; construction pictures in color, lubrication, reversal stops. Bulletin F-1454. 16 pages. U. S. Electrical Motors, Box 2058 A, Los Angeles 54, Calif. **IEN-01221**

NAMEPLATES . . Etched and lithographed nameplates, also scales, dials, rules; color picture examples for product identification. Booklet, 8 pages. Chicago Thrift-Etching Corp., 1553-57 N. Sheffield Ave., Chicago 22, Ill. **IEN-01222**

OIL CONDITIONING . . Picture review of oil and coolant filters, clarifiers, oil and chiphandling equipment, examples of use. Two bulletins, 4 pages each. Honan-Crane Corp., 510 Indianapolis Ave., Lebanon, Ind. **IEN-01223**

PACKAGING . . Pressure-sensitive tapes; 50 illustrated application ideas from palletizing loads to securing spare parts. Bulletin PC-FDTM6, 8 pages. Minnesota Mining & Mfg. Co., 902 Fauquier St., St. Paul 6, Minn. **IEN-01224**

PACKAGING . . Automatic filling scale to package bulk material in bags, 25 to 200 lb., accuracy to 1/10 lb.; performance data. Catalog Sheet 400-N. 2 pages. Thayer Scale & Engineering Corp., 492-96 E. Water St., Rockland, Mass. **IEN-01225**

PAINTING . . Suggested combinations for wall and trim paints, how to use color, details on a line of paints with color chips. "Engineered Color", 16 pages. Barrelled Sunlight Paint Co., 36 Dudley St., Providence 1, R. I. **IEN-01226**

PIPE FITTINGS . . How couplings are used in a number of industrial fields for standard and special applications. Pocket Booklet, "44 Uses", 16 pages. Pittsburgh Pipe & Coupling Co., 952 Allis St., Allison Park, Pa. **IEN-01227**

PLASTICS . . Picture summary on Bakelite and Vinylite plastics and resins for molding, protective coating, packaging, insulation, adhesives. Bulletin G-19. 16 pages. Bakelite Co., 30 E. 42nd St., Rm. 1503, New York 17, N. Y. **IEN-01228**

PLASTICS . . Impregnated wood; illustrated steps in manufacture, properties and color pictures on grades for handles, parts, press tools. Bulletin 312. 8 pages. Formica Co., 4612-22 Spring Grove Ave., Cincinnati 32, Ohio **IEN-01229**

PLASTICS . . Parts molded of nylon including gears, bearings, structural members; pictures and notes tell how properties of nylon are utilized. Folder, 6 pages. United Plastic Industries Inc., 1000 Brown St., Vassar, Mich. **IEN-01230**

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If you write maker identify as IEN - 12834

AMERICAN makes good STOCK gears . . . conveniently available to you through good distributors

You'll find American STOCK Gears meet every requirement for high quality, accurate tooth contour, smooth, quiet performance and long life.

Complete line includes:

Spur Gears . . . Racks . . . Change Gears . . . Internal Gears . . . Miter Gears . . . Bevel Gears . . . Ratchets and Pawls . . . Spiral Gears . . . Worms and Worm Wheels.

Write us for name of distributor nearest you . . . Also request a free copy of Specification Catalog.

asg AMERICAN STOCK GEAR division
PERFECTION GEAR COMPANY • HARVEY, ILLINOIS

If you write maker identify as IEN - 12835

SAFETYMIX

EXTRA SHOWER SAFETY . . . at no extra cost

PROTECTS AGAINST SUDDEN SCALDS

. . . Safetymix, world's leading pressure-actuated non-scald shower valve gives safety in the shower. Safetymix automatically shuts down flow if either hot or cold water fails.

HOLDS SHOWER TEMPERATURE CONSTANT

. . . Even with excessive pressure fluctuations up to 85%, Safetymix still maintains constant discharge temperature.

LIFETIME SHOWER VALVE

. . . The most rugged shower control valve made. Only Safetymix has the patented Flow Control Spindle with but *one* moving part to control *all* valve functions. Built to last a lifetime.

GET FREEDOM FROM COSTLY MAINTENANCE

. . . Safetymix is designed with self-cleaning action to prevent clogging and save water. All parts accessible from the front. As easy to fix as a faucet.

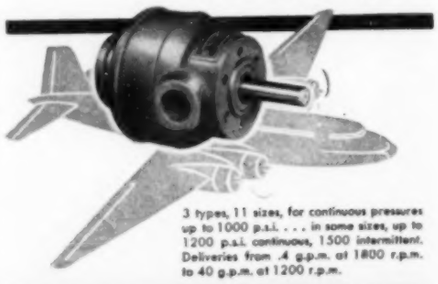
100,000 Installations Can't Be Wrong. Used by U. S. Army, Navy, Merchant Marine, colleges, industrial plants, hotels, clubs, hospitals, apartments and homes.

Send for bulletin and prices.

SAFETYMIX — MADE BY THE MAKERS OF THE NEW SYMMONS TEMPERING-CONTROLLER

Symmons ENGINEERING COMPANY
791 TREMONT ST., BOSTON 18, MASS.

If you write maker identify as IEN - 12836



3 types, 11 sizes, for continuous pressures up to 1000 p.s.i. . . . in some sizes, up to 1200 p.s.i. continuous, 1500 intermittent. Deliveries from .4 g.p.m. at 1800 r.p.m. to 40 g.p.m. at 1200 r.p.m.

you get the finest the fastest when you specify GEROTOR HYDRAULIC PUMPS

Gerotor May Corp. Baltimore 3, Md.

If you write maker identify as IEN - 12837

BETTER THAN EVER...

Archer PRESSURE SENSITIVE Contact Labels

STICKS INSTANTLY WITHOUT MOISTENING
CUTS COSTS • • • SPEEDS LABELING

AUTOMATIC DISPENSING

If your product requires a label . . . new improved Archer Contact Labels will do a better job faster, more simply and efficiently, at less cost.

Contact adhesive labels are easily "smoothed-on" with just finger-tip pressure. They stick and stay stuck on any smooth surface . . . there's no limit to their use. Contact labels are supplied mounted on carrying tape and are available in over 60 stock sizes . . . or designed to meet individual needs.

WRITE TODAY FOR COMPLETE DETAILS AND SAMPLES, WITHOUT OBLIGATION

Archer LABEL COMPANY
New York Chicago Cincinnati San Francisco Paris
97 W. UNION STREET • PASADENA 1, CALIFORNIA

If you write maker identify as IEN - 12838

Worth a Second Look

Since '26 JOY electrical plugs and receptacles have been Industry's outstanding value for portable power transmission. Molded as trim, one-piece (Neoprene/rubber) units they can't crack or shatter . . . won't lose their shape and are amazingly resistant to falls, blows, acids, oils, moisture or sunlight. Thousands of styles and shapes ranging from "cartridge-size" models to mammoth round (S.P.B.) units used in marine and mining applications have been developed. NO question about it . . . the JOY electrical connector line deserves a "second look". Ask for your free copy of Bulletin MC108

ILLUSTRATION SHOWS JOY ROUND STYLE PORTABLE PLUGS

OVER 100 YEARS ENGINEERING LEADERSHIP

JOY MANUFACTURING COMPANY

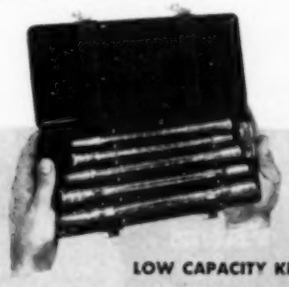
HENRY W. OLIVER BUILDING, PITTSBURGH 22, PENNSYLVANIA

IN CANADA: JOY MANUFACTURING COMPANY (CANADA) LTD., SARNIA, ONTARIO

If you write maker identify as IEN - 12839

for the First time

low flow rate measurements are not only predictable, but repeatable, with high accuracy—outmoding all other laboratory flow rate meters.



LOW CAPACITY KIT

This laboratory kit utilizes the new Fischer & Porter Tri-Flat tubes, an outstanding advance in the measurement of low flow rates. Covers flow ranges of 0.07 to 800 cc/min. of water or 5 to 34,500 std. cc/min. of air. Complete with 5 sizes of Tri-Flat tubes, glass and sapphire floats, data handbook, and carrying case. $95. f.o.b. Hatboro.

Predictable Performance FLOW TEST METER KITS

Fischer & Porter high capacity kits are ideal for pilot plant or field flow checking work. They are readily portable, protectively housed in a new and improved case, available with brass or stainless steel end fittings or with rubber hose connections.

HIGH CAPACITY KITS

Covers a flow range of 15 cc/min. to 6.60 GPM water or 690 std. cc/min. to 27 SCFM air. Write now for complete information.

FLOWRATOR

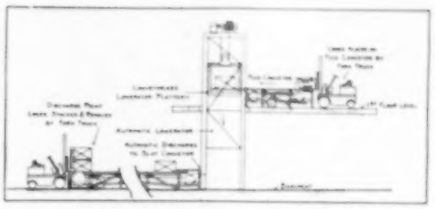
FISCHER & PORTER COMPANY

2010 County Line Road, Hatboro, Pa.

If you write maker identify as IEN - 12841

ELEVATOR . . And conveyors to handle work between two floors

Source: GIFFORD-WOOD CO.
3 Hudson Ave., Hudson, N. Y.



Operates either up or down

Sequence operation, with interlocking controls, characterizes this new combination of Lowerator elevator and motor-driven slat conveyors at the loading and unloading points. The equipment is interlocked so a load received at one point will be moved forward to the elevator car and either lowered or raised to the unloading point. Here the elevator stops and the load is removed to a discharge point to be taken away by a fork truck or other suitable equipment. One element in the assembly will not operate until the next one is ready.

The equipment is available for specified load and installation dimensions. It is intended to relieve regular elevators and trucking equipment. The installation shown in the illustration handles 2,500-lb. bundles of tin plate between two floors to eliminate a 140-ft. fork truck haul and to free an elevator.

If you write maker identify as IEN - 12842

TESTING . . Vibrating machine for equipment, materials, 3 to 60 cps.

Source: BUCK ENGINEERING CO.
Thomas St., Freehold 10, N. J.

Portable control housing

Spare Oscillator designates this new vibrating equipment which is being manufactured under patent 2,542,227 for variable mechanical oscillators. It consists of the vibrating table with universal spring mounting and the separate control housing with flexible shaft connection from the drive motors and controls in the housing to the table. Overall table dimensions are 58 in. across by 45 in. in height. Base legs are 120 in. long.

The driving mechanism within the table consists of a pivoted housing supporting three parallel shafts each carrying a set of weights whose center of gravity can be shifted to provide centrifugal force. Rotation of the outside shafts is opposite in direction to rotation of the center shaft so a linear force can be produced which pulsates from zero to maximum. Means are provided also to vary the angular relationship to set up a desired direction of action that can be changed while a test is in progress. Rated capacity is 1,000 lb. at 60 cycles per second. Amplitude ranges from 0 to ½ inch.

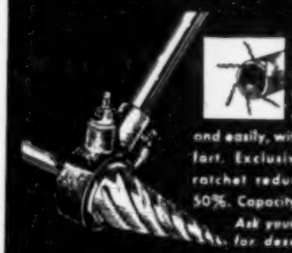
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

If you write maker identify as IEN - 12843

REED TRADEMARK

SELF FEEDING RATCHET REAMER

Saves Time, Money and Effort



Spiral flutes with patented cutting edges cut burr cleanly, quickly and easily, with no pushing effort. Exclusive double-pawl ratchet reduces lost motion 50%. Capacity ¼" to 2".

Ask your Jobber or Write for descriptive circular

In a vise or pipe tool . . .
if it's a REED, it's RIGHT

PIPE VISES AND STANDS · MACHINISTS VISES · THREADERS CUTTERS

REED MANUFACTURING COMPANY
ERIE, PENNSYLVANIA, U. S. A.

If you write maker identify as IEN - 12844

CUTS DIE COSTS

On a host of metal-working jobs — single-stage, compound, and progressive — Multipress adds *lower die costs* to other production gains. (a) Its smooth oil-hydraulic operation reduces die *impact*. (b) Fully adjustable pressure limits can be set only slightly above the exact need, permitting closer control of regrinding . . . more grinds per die . . . longer die life.

If you're looking for faster, better ways to *blank, form, draw, flare, broach, rivet, stamp, mark or press-fit*, you'll want details on Multipress. Eight frame sizes. One to fifty-ton capacities. Ram actions for any need. Write!

Typical part blanked and formed on progressive die by Multipress, from .030 gauge pre-painted strip metal, at Modern Venetian Blind Co., New Bedford, Mass.

The DENISON Engineering Co.
1150 Dublin Rd., Columbus 16, O.

MULTIPRESS®

If you write maker identify as IEN - 12845

CASTELL PUSH BUTTON LOCKTITE

the perfectly balanced holder
(black or colored)

An indispensable drawing tool for professional men everywhere — because LOCKTITE holds lead in bulldog grip, prevents it sliding back into holder. Reduces smearing and smudging, because your fingers never touch the graphite, except when refilling. Order from your Dealer today.

No. 9030
CASTELL Refill IMPORTED
Master Degree Leads
7B to 9H

Reproduces more clean, sharp blueprints than any other lead.

The same wonderful imported leads that you get in the CASTELL wood pencil. Usable in all standard holders. Also available in red, blue, green, yellow, carmine, orange, white and silver.

CASTELL the drawing pencil with the Master Degrees

A.W. FABER-CASTELL PENCIL COMPANY, INC. NEWARK, N. J.

If you write maker identify as IEN - 12846

AUTOMATIC FEEDING CAN'T MISS, CAN'T FORGET!

Write for FREE circulars.

⅓ THE COST you'd expect to pay! Step-up production, increase operator safety, with the new **BENCHMASTER FRICTION ROLL FEED**

5 sizes—from 11½" to 9" widths. Adaptable for all presses

benchmaster PUNCH PRESSES AND MILLERS

1835 West Rosecrans Avenue, Gardena, California

If you write maker identify as IEN - 12847

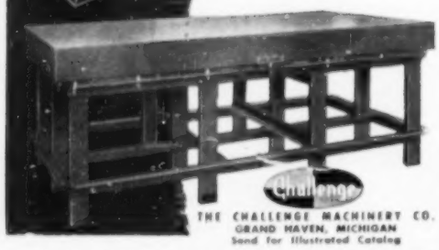
ALL THIS AND MORE
WITH CHALLENGE LAYOUT SURFACE PLATES

PRECISION

RIGID STAND

UNIT DESIGN

Built of fine-grade special analysis semi-steel . . . these plates provide a smooth accurate surface for layout, inspection or assembly work. Six inches thick, 16 standard sizes — 8" thickness and other sizes to order, also special plates with Tee Slots or grooving, ironing, machining as specified. Arc-welded, all-steel stand is equipped with lock leveling screws. Plates can be grooved and keyed so that two or more may be assembled into one complete unit, e.g., four 54 x 144" plates into one 108 x 288" unit. Write for data and prices at once!



Challenge

THE CHALLENGE MACHINERY CO.
GRAND HAVEN, MICHIGAN
Send for Illustrated Catalog

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At your service NATIONAL'S complete fabricating facilities

First objective in our fabricating service is to save you time, money and production headaches. Second objective is to make the service useful, but economical. Adequate facilities, modern laboratory plant and equipment, technical skills and the knowledge gained through 79 years of experience all play a part in helping us meet these objectives. Next time you need fabricated parts—one or one million—whether of National Vulcanized Fibre or Phenolite laminated plastic, get in touch with National. We're at your service.

NATIONAL VULCANIZED FIBRE

PHENOLITE Laminated PLASTIC

NATIONAL VULCANIZED FIBRE CO.
Wilmington, Delaware — Offices in Principal Cities
Since 1873

If you write maker identify as IEN - 12849

How to get the right drill for YOUR job!

The right drill for the job saves you time, money—and gives you better work! Why settle for a drill that's "almost" right?

PET Superduty drills are made in 54 distinct models, each with speeds and rated power that industrial users have asked for. Result? You can choose the drill that's exactly right for your job!

To top it off, every PET Superduty drill is built for rugged service. Dynamically balanced armatures stop vibration. Forced ventilation keeps them cool. Precision-cut gears run smooth, stay quiet. Big reserve power makes motors last longer.

Free Catalog can save money—for YOU!

If you want details on the best in electric drills—at prices that will come as a pleasant surprise—get the illustrated PET Superduty catalog! For your free copy, and name of your nearest PET distributor, write today to Dept. IE-112.

PET POWER TOOLS

PORTABLE ELECTRIC TOOLS, INC.
320 West 83rd Street, Chicago 20, Illinois
In Canada: Portable Electric Tools, Ltd., Toronto, Ontario

NEW LITERATURE—Continued

PLATING . . Automatic barrel-type machines for plating, phosphate-coating, similar processing; operating description, layout drawings. Catalog 60, 8 pages. Frederic B. Stevens Inc., 18078-92 18th St., Detroit 16, Mich. **IEN-01231**

PRESSES . . Deferred-payment plan, 12 to 36 months, on which you can purchase company's press equipment with 25 per cent down. "Deferred Payment Plan", 4 pages. E. W. Bliss Co., 1373-77 Raff Road S. W. Canton 10, Ohio **IEN-01232**

PRESSES . . Details on Warco pneumatic friction clutch and brake adaptable to any make of power press; description, maintenance instructions. "Warco Clutch", 6 pages. Federal Machine & Welder Co., 2 Dana St., Warren, Ohio **IEN-01233**

PRESS TOOLS . . Punches for closely-spaced small-diameter holes: 70 stock sizes from .032 to .189 in., list prices. Pocket folder, "Wire Punches", 6 pages. Dayton Punch & Insert Co., 917-21 Valley St., Dayton 4, Ohio **IEN-01234**

PROCESSING . . Corrosion-resisting equipment of rigid unplasticized polyvinyl chloride; notes on tanks, pipe, duct, and on properties of the plastic "Agilide", 4 pages. American Agile Corp., P. O. Box 168-A, Bedford, Ohio **IEN-01235**

PROCESSING . . Equipment for photographic print processing including print washer, silver recovery units, film drier; data summaries. Catalog pages, 7 sheets. Oscar Fisher Co., 1002 N. Division St., Peekskill, N. Y. **IEN-01236**

PROCESSING . . Tanks and process vessels for chemical industry use; picture examples of company's design and fabrication service. Chemical Folder, 4 pages. Graver Tank & Mfg Co., 4811 Tod Ave., East Chicago, Ind. **IEN-01237**

PROTECTING . . Goggles, helmets, respirators, masks, clothing, first aid, machine guards, signs; condensed data. Catalog 100, letterhead request. 144 pages. Boyer-Campbell Co., 6538-42 St. Antoine St., Detroit 2, Mich. **IEN-01238**

PUMPS . . General-purpose centrifugal pumps, 5 to 2,400 gpm., 10 to 500 ft. head; details on cradle-mounted design, sizes, modifications. Form 7223, 16 pages. Ingersoll-Rand Co., 11 Broadway, Dept. C. P., New York 4, N. Y. **IEN-01239**

PUMPS . . Centrifugal type, horizontal and vertical; construction, ratings, dimensions on a variety of designs with application notes. Catalog, 36 pages. Nagle Pumps Inc., 1241 Center Ave., Chicago Heights, Ill. **IEN-01240**

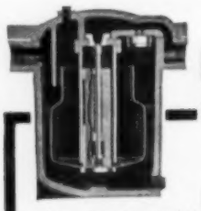
RECTIFYING . . Selenium power rectifiers in sizes to 50 kw. dc. output per unit; standard ratings, notes on construction features. Catalog sheet, 2 pages. Richardson-Allen Corp., 116-17 15th St., College Point, N. Y. **IEN-01241**

REFRIGERATING . . Low-temperature freezers and adjustable-temperature test chambers; standard units and ranges, applications. Folder, 8 pages. Webber Appliance Co., 2738-42 Madison Ave., Indianapolis 3, Ind. **IEN-01242**

RUBBER PRODUCTS . . "Linatex" natural rubber sheet; properties, fabrication, summary of uses in abrasion, corrosion, vibration resistance. Bulletin L-101, 4 pages. Linatex Corp. of America, 852 Vernon Ave., Rockville, Conn. **IEN-01243**

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12850



ILLINOIS STEAM TRAP

Simple—has only two moving parts

Valve Stem Travels Independent of Bucket—no other trap has this feature.

Instantaneous Valve Action—either wide open or tight shut—will not dribble on partial closing of valve under slow condensation rates.

Wire Drawing Impossible—valve has snap action.

Simple—moving parts are valve and bucket.

Cannot Air Bind—vents air continuously without loss of steam.

Cannot Blow Steam—always water sealed.

Surface Discharge—flushes out all grease and sludge.

Valve Seat—of special alloy, fully guaranteed.

Inspection Easy—without disturbing piping.

Works Equally Well on All Fluids—compressed air lines, air separators, air aftercoolers.

Write for Bulletin 35

Consult us on your requirements

ILLINOIS ENGINEERING COMPANY
INCORPORATED 1902
RACINE AVENUE AT 21ST STREET • CHICAGO 8

If you write maker identify as IEN - 12851

AMAZINGLY COMPACT GEARING!

The most frequently cited reason for specifying Cone-Drive gears and speed reducers is "their amazing compactness."

The reason why Cone-Drive gears are so compact is that they are 'double-enveloping'. They thus have more teeth in continuous contact and load per tooth is distributed more evenly over each tooth face.

As a result, smaller gears—up to ⅓ smaller center distances—can be used to carry the loads when Cone-Drive gears are specified.

If space saving is one of your design objectives, it will pay you to look into Cone-Drive gears and reducers . . . NOW.

They can be a big help to you and they are available in a wide range of standard sizes and ratios.

CONE-DRIVE GEARS
DOUBLE ENVELOPING GEAR SETS & SPEED REDUCERS
Davison Michigan Tool Company
7171 E. McNichols Road • Detroit 12, Michigan

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A Message to ORDNANCE Prime and Subcontractors requiring Cast Armor and QQS 681-B Material

LET RIVERSIDE HELP SOLVE YOUR CASTING PROBLEMS

Riverside Foundry is ready to give you excellent service on cast armor and all types of QQS 681-B materials. *In fact, any steel casting specifications for which your contract might call.* We have a full staff of men who have spent years producing ordnance material.

Our customers include many great names of American Industry: Chrysler, American Locomotive, International Harvester, Fisher Body and Ford Motor Company. *Ask them about Riverside.*

Call or write us at Riverside today.

For a dependable qualified source of steel casting requirements, see Riverside. You give us your drawings. The rest of the job is ours. Save yourself time, worry and loss of production. We are ready to do a complete job for you on any casting requirement.

The big modern Riverside foundry at Bettendorf, Iowa has the best equipment to do the best job.

IOWA

IOWA'S LARGEST INDEPENDENT FOUNDRY
Riverside Foundry
Bettendorf, Iowa

If you write maker identify as IEN - 12854

ROUGH AND TOUGH FOR LONG SERVICE LIFE

NEW SURETY **TRIPL-PALM** GLOVES

"TRIPL-PALM CONSTRUCTION"
Where Punishment is Roughest

These new rough and tough, Surety TRIPL-PALM GLOVES have an extremely heavy synthetic rubber coating on the palm where the greatest resistance to wear and abrasion is needed most—yet, they are soft and pliable for hand comfort. On any job where there is extreme abrasive action—TRIPL-PALM GLOVES will outwear, by many times, the usual coated glove.

All styles available from your jobber or write today.

NO SEAM HERE
WING THUMB CONSTRUCTION MULTIPLIES GLOVE LIFE

THE SURETY RUBBER CO.
DEPT. 1, CARROLLTON, OHIO

If you write maker identify as IEN - 12855

The most important parts in industry pass through KRAUS HOPPERS

Let Kraus help you develop the right hopper, chute and assembly machines to handle the parts that make up your product. Send sample pieces for quotations today.

kdi

Kraus Design, Inc.
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Rochester 8, N. Y.

If you write maker identify as IEN - 12856

STATIC or DYNAMIC

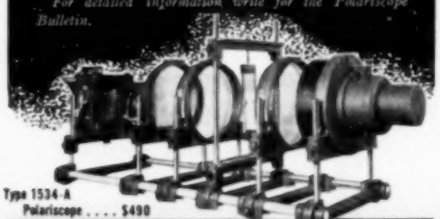
stress studies with the portable polariscope

The G-R Type 1534-A Polariscope is a compact, portable, precision instrument which for the first time makes practicable low cost, photo-elastic stress analysis in the drafting room, testing department and demonstration room as well as in the laboratory.

This polariscope enables identification of stress concentrations . . . reveals stresses at inaccessible points . . . simplifies the design of full-scale parts.

Visual or photographic studies of small, inexpensive plastic models of mechanical parts and structural members can be made quickly, accurately and inexpensively.

For detailed information write for the Polariscope Bulletin.



Type 1534-A Polariscope $490

GENERAL RADIO Company 275 Massachusetts Ave. Cambridge 39, Mass.
90 West St. NEW YORK 6 920 South Michigan Ave. CHICAGO 5
1000 North Seward St. LOS ANGELES 38

If you write maker identify as IEN - 12857

RELAY . . For end point control over process temperature or pressure

Source: MINNEAPOLIS-HONEYWELL REGULATOR CO.
4456 Wayne Ave., Philadelphia 44, Pa.

To stop the action

New relay assemblies in a circuit between an electric temperature or pressure controller and a solenoid or motor operated valve in connection with a process employing heat or pressure. At the start of the process the relay contacts are closed by depressing a push button. This closes the circuit to start heat or pressure input. At the same time a signal light is turned on in the relay housing. When the predetermined temperature or pressure is reached, the relay contacts open the circuit to stop further input. They hold open until the push button is again depressed. Contact rating is 13 amp. on 110 volt ac. Dimensions are about 4¼ by 2⅝ by 5¼ inches.

If you write maker identify as IEN - 12858

CONSTRUCTION . . Corrugated steel curved to build arches and culverts

Source: YOUNG & GREENWALT CO.
332 S. Michigan Ave., East Chicago, Ind.

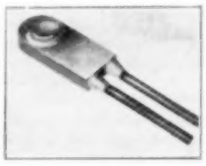
For assembly in the field

The company announces installation of new equipment with which it is prepared to supply corrugated steel sheets curved longitudinally to a required radius for use in arches and culverts. Several sheets can be employed to make up a given arch or a pipe. Under certain conditions, plates of varying curvature can be used in a complete unit. Abutment, fit and final shape are accurate. The curved sheets can be shipped in much less space than would be required for a complete circular assembly.

If you write maker identify as IEN - 12859

SWITCH . . Snap-acting design for vehicle use, 10 amp. on 28 volt dc.

Source: CONTROL PRODUCTS INC.
304-8 Sussex St., Harrison, N. J.



For rough use

Various styles including single pole, single throw or double pole, double throw, toggle and push button operation, as well as the foot operated unit shown in the illustration, are included in a new line of over center snap acting switches. Each is enclosed in a silicone cover that completely seals the mechanism from moisture and dirt and makes it explosion proof and water proof. Operation can be maintained in a temperature range between minus 65 and plus 165 deg. F. The switch is particularly designed for military vehicles. It rates 20 amp. on a resistive load, 10 amp. on a lamp load at 28-volt dc.

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If you write maker identify as IEN - 12860

PRODUCTION LINE EFFICIENCY WITH LABORATORY PRECISION
with New
INDUSTRIAL REFRACTOMETER

The new Industrial Refractometer provides a routine control operation directly on the production line. It eliminates the need for taking samples to the laboratory and gives faster results without sacrificing precision.

It is essential in the processing of many widely diversified materials . . . it is simple to operate even by untrained personnel . . . it is easy to read . . . and it is built for endurance. There are no moving parts, no adjustments to be made.

WRITE FOR COMPLETE INFORMATION

FISHER SCIENTIFIC
717 FORBES ST. PITTSBURGH 19, PA.

If you write maker identify as IEN - 12861

WHAT SAVINGS Could you make with *Fullergrip* BRUSHING

These metal-backbone brush strips bring to many industries a new opportunity to cut production costs—because *Fullergrip* brushing is the answer to many problems. Sizes, to date, run from ¼ inch to 18½ feet in length. Shaping possibilities present almost unlimited mounting variations. Look into the promising methods opened to you by *Fullergrip* power brushing. Write today.

Fullergrip

Industrial Division Fuller Brush Co.
3583 MAIN STREET HARTFORD 2, CONN.

Fullergrip, Wet and Dry Mops, Brooms, Floor and Special Brushes.

If you write maker identify as IEN - 12862

A Thrifty Pair for Air!

MASONEILAN'S NO. 71 REDUCING VALVE AND NO. 61 FILTER

Together these sturdy new Masoneilan Air Reducing Valves and Air Filters provide all that's needed to keep air clean and pressure uniform. Their extra rugged construction reduces maintenance, increases service-life.

For initial pressures up to 250 psi. Reduced pressures 5—60 psi; 60—100 psi. Sizes ¼" to ½". Pressure gauge included. Sold separately or in combination.

See your Mason-Neilan Industrial Distributor

MASON-NEILAN REGULATOR CO.
1188 ADAMS STREET, BOSTON 24, MASS., U. S. A.

If you write maker identify as IEN - 12863

Over Half of America's Top Companies Use "Speed Sweep"

Write for styles, sizes and prices.

MILWAUKEE DUSTLESS BRUSH CO.
MILWAUKEE 3, WISCONSIN

If you write maker identify as IEN - 12864

Steel Strapping Dispenser

New Acme Steel tool saves time and effort in packing and shipping

This new Acme Steel E4CO Dispenser can hold and cut to length two coils of heavy duty steel strapping at the same time.

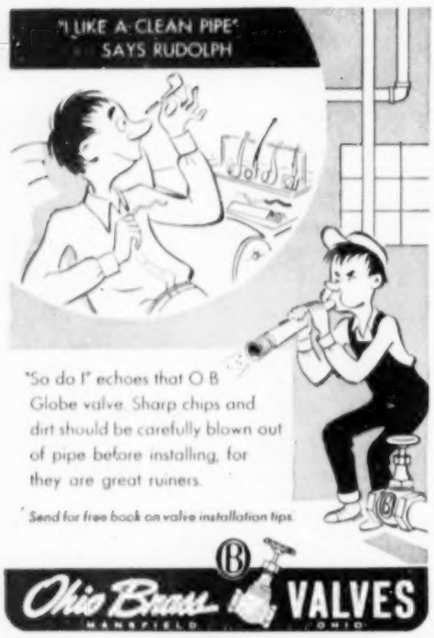
One easy downstroke of the 30" hand lever cuts any two-coil combination of ¾", 1¼" or 2" strapping. Efficient shear mechanism features high grade tool steel blades for long service. V-belt feed control minimizes strap over-run.

If you use flat steel strapping to reinforce large shipping containers, to bundle heavy units together, or to brace carload shipments . . . this dispenser can help you. Call the Acme Steel service office nearest you or write Acme Steel Products Division, Dept. IEN-112.

ACME STEEL

ACME STEEL COMPANY
2840 Archer Avenue, Chicago 8, Illinois

If you write maker identify as IEN - 12865



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Drill Hardened Steels without Annealing—

With the new, improved "HARDSTEEL" Drill, you can do accurate, smooth drilling, countersinking, counterboring and reaming in steels hardened by any process without first annealing the work. And they work with equal ease on work-hardening steels and high carbon—high chrome steels of any degree of hardness.

"HARDSTEEL" Drills fit standard drill presses. They save time and reduce rejects. They permit engineering changes requiring additional drilling after hardening. And parts drilled after hardening always match at assembly.

Write for a copy of the "HARDSTEEL" Operators Manual showing how "HARDSTEEL" drills are cutting costs in thousands of plants.

You Harden It—We'll Drill It—With "HARDSTEEL"

BLACK DRILL COMPANY, INC.
1378 East 222nd St. • Cleveland 17, Ohio

Also makers of— BLACK DRILLING UNITS—AUTOMATIC, SELF-CONTAINED—FOR COST-CUTTING PRODUCTION ON ALL MATERIALS
Write for information

NEW LITERATURE—Continued

RUBBER . . Liquid that converts to tough, resilient, solvent-resistant rubber at room temperature; properties, suggested uses. "Polymer LP-2", 4 pages. Thiokol Corp., 778-82 N. Clinton Ave., Trenton 7, N. J. IEN-01244

RUBBER PRODUCTS . . Molded, extruded, calendered, punched parts, also bonded rubber-to-metal parts; picture examples. "Industrial Rubber Headquarters", 8 pages. Yale Rubber Mfg. Co., 952 Russ St., Sandusky, Mich. IEN-01245

SAWING . . Bandsaw blades for cut-off service on horizontal and vertical machines; data on raker and wave set types, list prices in four widths. Bulletin 51-805, 4 pages. DoAll Co., 252-56 N. Laurel Ave., Des Plaines, Ill. IEN-01246

SCAFFOLDS . . Recommendations on scaffolds and ladders grouped under four types of maintenance work, application suggestions. Bulletin G-205, 8 pages. Patent Scaffolding Co., 38-23 12th St., Long Island City 1, N. Y. IEN-01247

SCAFFOLDS . . Maintenance scaffolds, sectional steel scaffolds, hoisting towers, elevators; components, assembly methods, uses. Mailing folder KP, 8 pages. Wilson-Albrecht Co., 3563-67 Wooddale Ave., Minneapolis 16, Minn. IEN-01248

SEALING . . Natural cork products including sheet, plugs, floats, handles, gaskets, wheels, corkboard; typical compositions, characteristics, uses. Bulletin, 4 pages. Dodge Cork Co., 662-66 Manor St., Lancaster 19, Pa. IEN-01249

SEWING . . Machines for work clothing, listed by operation, stitch and seam. Bulletin 251, for shirts and pants; Bulletin 253, for overalls, 6 pages each. Union Special Machine Co., 410 N. Franklin St., Chicago 10, Ill. IEN-01250

SIGNS . . For plant and factory identification; pictures of typical outdoor installations, offer of no-obligation sample sketch. Folder EWF, 6 pages. Federal Enterprises Inc., 8745 S. State St., Chicago 19, Ill. IEN-01251

STORING . . Steel cabinets in shelf and wardrobe designs, also counter and tool cabinets; condensed data, detail specifications. Catalog C-200, 8 pages. Penn Metal Co. of Pa., 50 Oregon St., Philadelphia 48, Pa. IEN-01252

TESTING . . Model-FGT testing machine, 1,000 to 50,000 lb. ranges, based on SR-4 strain gages; description, types of tests performed. Bulletin 4202, 4 pages. Baldwin-Lima-Hamilton Corp., Paschall P. O., Philadelphia 42, Pa. IEN-01253

TESTING . . Voltage-regulated power supplies for electronic work; specifications on filament and high-voltage output. "Power Supplies", 20 pages. Kepco Laboratories, 131-40 Sanford Ave., Flushing 55, N. Y. IEN-01254

TIRES . . Pneumatic, semi-pneumatic and solid types for industrial use; maintenance suggestions, application notes on the designs. "Industrial Tire Guidebook", 12 pages. F. F. Goodrich Co., 448-52 S. Main St., Akron 11, Ohio IEN-01255

TRANSFORMERS . . "Pole Star" distribution transformers, sizes to 500 kva., 2,400 to 43,800 volts; construction, electrical and mechanical data. Catalog 352, 16 pages. Pennsylvania Transformer Co., Box 330-A, Canonsburg, Pa. IEN-01256

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If you write maker identify as IEN - 12867

GOOD NEWS!

NOW—Grind Carbide Tools WITHOUT Diamonds!

★ AVAILABLE IMMEDIATELY
★ 3 SIZES:
14" x 4" x 11"
10" x 2" x 7"
6" x 1" x 4"
★ ECONOMICAL
★ RAPID CUTTING
★ STANDARD PLATE MOUNTING

FINISH-GRIND Carbide Tool-points with BAY STATE Vitrified Wheels.

- Proven in field production tests.
- Cut as fast as diamond wheels.
- Cut costs to a minimum.

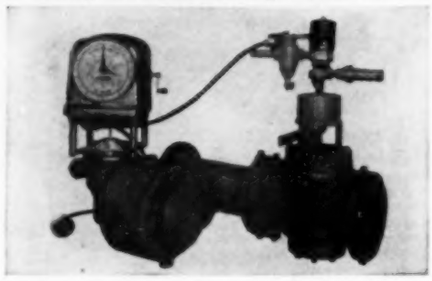
BAY STATE

ORDER A TRIAL WHEEL TODAY

BAY STATE ABRASIVE PRODUCTS CO.
Westboro, Mass., U. S. A.
Branch Offices and Warehouses: Chicago, Cleveland, Detroit, Pittsburgh
Distributors—All Principal Cities
In Canada: Bay State Abrasive Products Co. (Canada) Ltd., Brantford, Ont.

If you write maker identify as IEN - 12868

When engineers think of Automatic Batching they automatically think of



THE Fluidometer SYSTEM

Bulletin F149 sent on request.

HETHERINGTON & BERNER INC.
Engineers—Manufacturers
725 Kentucky Ave. Indianapolis 7, Ind.

If you write maker identify as IEN - 12869

ELECTRICAL OUTLETS WHERE YOU WANT THEM

PLUGMOLD 2000 with SNAPICOIL by WIREMOLD

EASY TO INSTALL!
PRE-WIRED Snapicoil receptacles snap right into raceway cover in a continuous run!

Plugmold 2000, the easily installed multi-outlet system, provides Duplex or NEMA grounded outlets *every 30 inches* in a continuous run . . . closer spacing, if you want it.

Plugmold 2000 is just as helpful in offices, too . . . providing plenty of outlets for typewriters, calculators, adding machines, lamps, fans, and other office machines—without hazardous extension cords.

Write today for the new, free Plugmold 2000 book!

PLUGMOLD 2000

WIREMOLD'S *New* multi-outlet system

THE WIREMOLD COMPANY
Hartford 10, Connecticut

If you write maker identify as IEN - 12871

8 reasons for specifying

Bristol Series 500

recording voltmeters and ammeters

1. Lowest burden of any round-chart recorder on the market.
2. Extremely high torque gradient.
3. Temperature compensated.
4. Shock-proof moving element mounting.
5. Leveling of instrument not critical.
6. Continuously legible recording on sudden changes—up to full scale value.
7. Moving-iron measuring mechanisms, known for high torque.
8. Incorporate design refinements by Bristol engineers for greatest accuracy and ruggedness.

Write for Bulletin E1111.

THE BRISTOL COMPANY, 107 Bristol Road, Waterbury 20, Conn.

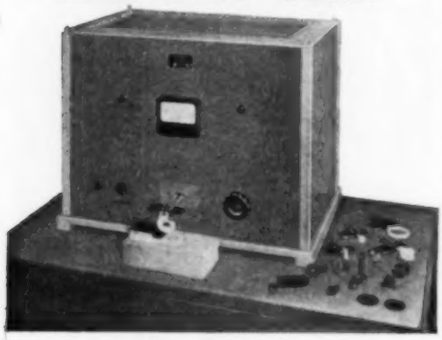
BRISTOL *The dependable Yardstick of Industry*

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

If you write maker identify as IEN - 12872

Lepel *presents*

A *Low Cost* PORTABLE HIGH FREQUENCY *Induction* HEATING UNIT



This versatile unit is priced so low that every shop may now take advantage of modern induction heating techniques to improve quality and to increase production. Its simplicity of operation eliminates the need for skilled personnel.

The Lepel Model 2 KW will meet the requirements of machine shops, toolrooms, research laboratories and educational institutions. It is especially suitable for hardening, brazing and soldering small parts of either ferrous or non-ferrous metals.

Complete unit with line connection and load coil **$870.** f. o. b. factory

- **SMALL AND COMPACT** Conveniently operated on bench or table—no mounting necessary.
- **ECONOMICAL OPERATION** No special power installation required. Operates on 110 volts, 60 or 50 cycle line at unity power factor.
- **FULLY GUARANTEED** Guaranteed for continuous duty cycle and stated performance.

WILL HEAT TO 1500° F.

¼"	steel rod 1"	length	in	approx.		1	second
½"	"	"	"	"	"	3	seconds
¾"	"	"	"	"	"	15	seconds
1"	"	"	"	"	"	60	seconds

Will melt 4 ounces of brass or steel in 4 minutes. Equally well suited for heating of non-ferrous metals.

All Lepel equipment is certified to comply with the requirements of the FCC.

LEPEL HIGH FREQUENCY LABORATORIES, INC.
55th STREET and 37th AVENUE, WOODSIDE 77, NEW YORK CITY, N. Y.

If you write maker identify as IEN - 12874

DUST COLLECTING . . Filter unit removes dust from air at a machine

Source: TORIT MFG. CO.
286 Walnut St., St. Paul 2, Minn.

For continuous duty

Hopper bases and special valves have been added to certain of the assemblies in the company's line of dust collecting equipment for applications involving heavy duty and continuous operation. The collector is available in the bag type filter assembly shown in the illustration and also in a cyclone design in which centrifugal separation takes place of the filter action.

In both cases the valve at the bottom of the hopper is Syntron-Mucon design, previously described IEN-6507-51, for dust except those that include shavings, chips and other sharp materials. In this latter case a hinged plate faced with rubber takes the place of the nylon fabric unit.

Dust laden air is drawn into the housing by a motor driven blower. The bag type filter elements stop the dust and permit the air to pass through for exhaust. The bags are agitated at intervals by a lever on the side of the housing to shake the dust down into the hopper at the bottom.

If you write maker identify as IEN - 12875

FEEDING . . Metering pump to meter hot or cold insulating wax

Source: EDWARD E. ROBINSON INC.
93-97 Park Ave., Nutley 10, N. J.

Delivery amount accurately controlled

We should have added information in our previous description, IEN-10073-52, covering the company's metering pump, that it also is available in a "cold" uninsulated design to handle fluid materials that do not require heating in the tank. In cases where the pump is to handle viscous liquids a thermostatically controlled cartridge heater is installed in the pump itself and not in the supply tank. This heater raises temperature in the bronze gear housing and the 1½-gal. bronze tank for delivery at 100 to 140 deg. F.

If you write maker identify as IEN - 12876

LIGHTING . . Inspection light designed to enter 1¾ in. opening

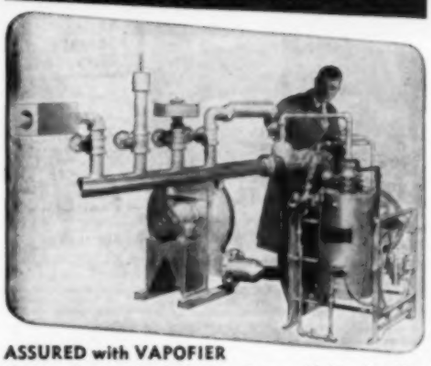
Source: ERICSON MFG. CO.
5207-11 Euclid Ave., Cleveland 3, Ohio

No. 121 C & E is a new inspection light mounting a holder with a 25-watt T-10 tubular lamp and a 20-ft. extension cord and plug. The lamp is cushioned by a spring in the holder.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12877

PRODUCTION INSURANCE *against* GAS CURTAILMENT



ASSURED with VAPOFIER

Many costly plant shutdowns have been avoided by installing Vapofier as a dependable gas supply. Over 100 varied types of industries use it. Produces clean, sootless, odorless gas by vaporizing (not atomizing) fuel oil. Reliable automatic control, constant fuel-air ratio and uniform manifold pressure. Quick change from utility gas without flame interruption, using same piping and burners. 9 sizes with capacities from 70,000 to 4,000,000 B.T.U.'s per hour.

Write for complete details on the advantages of firing with Vapofier

VAPOFIER CORP. • 10326 S. Throop St., Chicago 43, Ill.

If you write maker identify as IEN - 12878

CAN YOU AFFORD NOT TO GIVE YOUR WORKERS PROPER *Seating*?

A tired worker costs MUCH more than a GOOD CHAIR

***Royal's* 515 STOOLS WILL HELP KEEP YOUR WORKERS AT PEAK EFFICIENCY...**

Resulting in More Work Produced per Man Hour and Lower Actual Costs per Chair.

- STURDY MASONITE INSERT IMBEDDED IN SEAT PAN.
- LEG EXTENSION FOR EASY HEIGHT ADJUSTMENT.
- ADJUSTABLE BACKREST.
- OVEN BAKED GREY ENAMEL FINISH.

60 DAY FREE TRIAL examine it... test it... use it without obligation

ROYAL METAL MFG. CO.
175 NORTH MICHIGAN AVENUE
CHICAGO 1, ILLINOIS

If you write maker identify as IEN - 12879

WRENN PAPER COMPANY

SELECTS B&S

SHEAR-CUT SLITTER-REWINDER

The Wrenn Paper Company, widely recognized for its high quality products, was faced with the problem of slitting a hard-to-handle material. Clean, square edges and uniformly wound rolls were of utmost importance.

After considering several machines, the Bagley & Sewall #15 Shear-Cut Slitter-Rewinder was selected.

B & S Slitters and Rewinders are doing outstanding jobs in mills and converting plants all over the country. Their many unique money-saving advantages make them the first choice of the industry. Before you buy, *compare*...and your choice, too, will be B & S Slitting and Rewinding equipment.

For full details write to The Bagley & Sewall Company, Watertown, New York.

Inserts show Shear-Cut Slitter Units

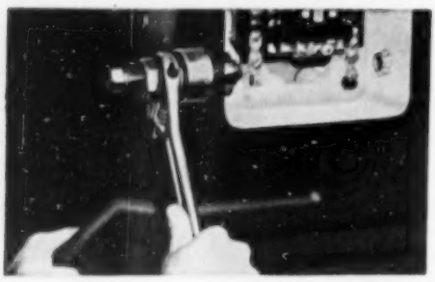
BAGLEY & SEWALL

designers and builders of

WATERTOWN, NEW YORK
QUALITY MACHINERY
SINCE 1863

Foreign Representative: CASTLE & OVERTON, INC., 630 Fifth Ave., New York 20

If you write maker identify as IEN - 12881



Accurate "clean" openings for conduit easily made in 1½ minutes or less

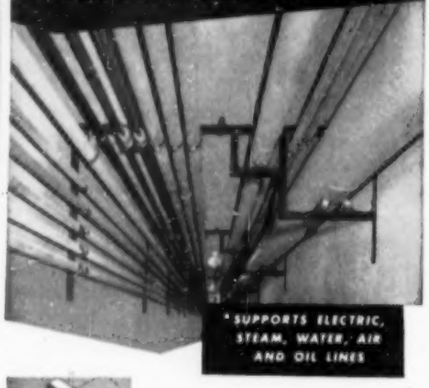
Speed conduit installations with GREENLEE Knockout Punches and Cutters. Eliminate time-wasting drilling and filing to enlarge holes. Do the job in 1½ minutes or less with these GREENLEE tools that cut smooth holes up to 4" to accommodate conduit in sizes ranging from ½ to 3½". Do the job neater, faster, easier, this way.

GREENLEE

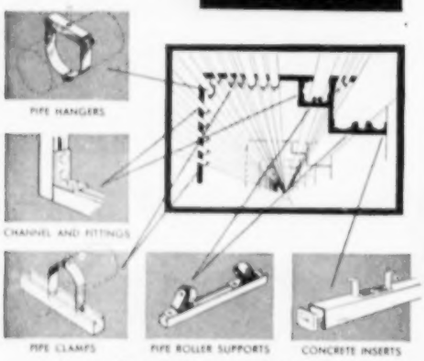
GET FACTS TODAY on all four types of Greenlee Knockout Punches and Cutters and Greenlee Hydraulic Knockout Punch Driver. Greenlee Tool Co. 1871 Herbert Avenue, Rockford, Illinois.

If you write maker identify as IEN - 12882

UNISTRUT metal framing system
DOES THE ENTIRE JOB*
FOR PUBLIC SERVICE COMPANY OF INDIANA, INC.



*SUPPORTS ELECTRIC, STEAM, WATER, AIR AND OIL LINES



In this large, main tunnel installation at Plainfield, Indiana, the UNISTRUT system supports all the services in one neat package—provides a new and more flexible type of mechanical support for every kind of piping, conduit and cable. Assures exact pitch or slope. Permits adjustments, changes or additions at any time. No drilling, no welding, no special tools or equipment. Conserves steel, reduces manpower hours, cuts over-all costs.

Write for FREE 78-page Construction Catalog

UNISTRUT PRODUCTS COMPANY
1013 W. Washington Blvd.
Chicago 7, Illinois Dept. D11

Please send Free 78-page Construction Catalog No. 700

Name.....
Company.....
Address.....
City.....Zone.....State.....

NEW LITERATURE—Concluded

TRAPS . . Steam traps for 250 to 1,500-lb. pressures; operating sequence, list prices, capacity chart, calculations, air traps. Bulletin 213, 12 pages. Armstrong Machine Works, 888 Maple St., Three Rivers, Mich. **IEN-01257**

TRUCKS . . Electric industrial trucks, 1,000 to 10,000 lb.; selection table on fork and ram models, also platform and crane models, attachments. Catalog 54, 8 pages. Baker-Raulang Co., 1248-52 W. 80th St., Cleveland 2, Ohio **IEN-01258**

TUBES . . Croloy 12 and 12-2 hardenable ferritic stainless steel tubes to 8⅝ in. od.; properties, fabrication, applications. Bulletin TDC-143, 4 pages. Babcock & Wilcox Co., 4027-31 Fourth Ave., Beaver Falls, Pa. **IEN-01259**

TUBES . . Flexible metal, ¾ to 12 in. i.d.; dimensions on two types, uses as ventilating duct, conveyor tube, conduit, voice tube. Fidder CMH-115R, 4 pages. Flexonics Corp., 1333 S. Third Ave., Maywood, Ill. **IEN-01260**

TUBE FITTINGS . . With long radii and smooth lines to promote flow, originally for vacuum cleaning lines; data on types from 2 to 2½ inches. "Vacu-Flo", 4 pages. H-P Products Inc., 300 Broad St., Louisville, Ohio **IEN-01261**

VALVES . . Brass shut-off cocks, valves, flare and compression tube fittings; data and list prices, special products. Catalog 52, 40 pages. Anderson Brass Co., 5301-5 12th St., Dept. 16, Detroit 8, Mich. **IEN-01262**

VALVES . . Solenoid types for hydraulic, pneumatic and rocket-fuel service, also check valves; illustrated data summaries. "Marotta Valves", 8 pages. Bridgeport Thermostat Div., 1223-27 Connecticut Ave., Bridgeport 1, Conn. **IEN-01263**

VALVES . . Temperature and pressure-regulating units for process work, self-actuated design; data summaries, also packless valves. Catalog D, 12 pages. Fulton Sylphon Div., 2451 W. Cumberland Ave., Knoxville 16, Tenn. **IEN-01264**

VALVES . . "Electrimatic" solenoid valves, direct acting, pilot acting; sizes, refrigerant capacities, dimension drawings, installation. Bulletin 77, 4 pages. Marsh Instrument Co., 3563 Howard St., Skokie, Ill. **IEN-01265**

WELDING . . And brazing alloys, solders, fluxes; selection table and instructions, one for Nichrome to copper. Pocket "Buyers Guide", 32 pages. All-State Welding Alloys Co., 251-53 Ferris Ave., White Plains, N. Y. **IEN-01266**

WELDING . . Arc electrodes for mild, high-tensile, stainless steels, hard surfacing, copper, cast iron; properties, recommended procedures. Booklet GED-1634, 52 pages. General Electric Co., Dept. 6X-201, Schenectady 5, N. Y. **IEN-01267**

WELDING . . AC. arc-welding machine, 200 to 500 amp. ratings, integral arc-stabilizing capacitor; illustrated description. "No Pop-Outs", 4 pages. Metal & Thermit Corp., 100 E. 42nd St., 17th Flr., New York 17, N. Y. **IEN-01268**

WELDING . . Equipment for production parts; examples of spot, projection, multiple-transformer units, upsetting equipment. Catalog, 48 pages. Multi-Hydromatic Welding & Mfg. Co., 23169-73 Groesbeck, East Detroit, Mich. **IEN-01269**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12884

SPEED UP SLOW-FLOW MATERIALS

TARS
PLASTICIZERS
WAXES
MOLASSES
GLUES
RESINS
GREASES
GUMS . . ETC.

ACRAWATT ELECTRIC
DRUM HEATERS
FIT ALL STANDARD 22½" DRUMS

- Proven Acrawatt THINSTRIP Construction.
- 3 Heats: 3000 Watts 230 Volts.
- Fast Heat Transfer.
- Aluminized Steel Encased.
- Enclosed Wiring Terminals.
- Low Radiant Loss.
- Fully Insulated.
- Easy to Install and Remove.

Kill time-consuming, costly slow-flow of viscous materials. Slip one or more Acrawatt Drum Heaters on your drums. Make cloggy, sluggish contents get a move on. Go on and off in a jiffy. Safe and simple to apply and operate. Use singly or in multiple. Save with Acrawatt reliability, long life ruggedness and efficiency. Order today.

ORDER NOW
EA. $19.50 F.O.B. CHICAGO
Spot Shipment
Shipping Wgt. 10 Lbs.

FOR BETTER ELECTRIC HEATERS AT BETTER PRICES, LET US QUOTE

ACRA INDUSTRIAL ELECTRIC CO.
9905 PACIFIC AVENUE FRANKLIN PARK, ILLINOIS

If you write maker identify as IEN - 12885

Even where clearances are small, oil seal replacements are no problem with easy-to-install split-type Clipper Seals.

All you do is: (1) Hook the self-adjusting garter spring around shaft. (2) Spread the seal at the split and slide it over shaft. (3) Slip the garter spring inside its groove in the seal and press assembly into cavity.

Precision molded Clipper Seals are made for sealing against oil, grease, water, air, grit and coolants . . . are available for shafts up to 66" in diameter. Write for Catalog PK-46A. Address: Johns-Manville, Box 60, New York 16, N. Y.

JM

Johns-Manville CLIPPER SEALS

If you write maker identify as IEN - 12886

You change chart speeds
this simple way

Now! **simplified...**
Recording Potentiometer

by WESTON

Maybe you seldom change chart speeds . . . while other users frequently do. But should the need arise, isn't it best to have a *flexible* instrument . . . one quickly adaptable for any requirement that comes along?

As shown above, the change is simple and quick with the new WESTON Recording Potentiometer. No multiplicity of gears involved . . . no complicated gear changes to make. This speed linkage permits quick selection of 5 different speeds by simple screwdriver adjustment. And these speeds can be doubled or quadrupled by quickly changing only two gears.

This is just one of a dozen features that make this the simplest, most flexible recorder ever offered. Changing ranges, installing charts, removing amplifier . . . all are just as simple and quick! Combined, they cut maintenance 'way down. And for accuracy and dependability . . . they're assured by the name the instrument bears. For full details, ask your local WESTON Representative, or write . . . WESTON Electrical Instrument Corporation, 617 Frelinghuysen Ave., Newark 5, N. J. . . . *manufacturers of Weston and Tag instruments.*

WESTON Instruments

If you write maker identify as IEN - 12888

SAFETY FILE HANDLES by Remoort

give lasting safety and surfacing clearance with no handle interference, making them ideal for die-makers—under and over handle gives complete visibility for lathe work. Files are securely held in a steel, dove-tailed V-block . . . . just drive it on—knock it off to remove. Light in weight, wooden handle absorbs moisture and oil, assuring a firm grip. Designed for lasting performance. Sizes 6" to 16", for all Mill, Flat and Half-round files. Prices as shown.

Write today to: For 12" to 16" Files Sizes as Above Weight 8 Ounces

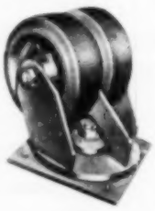
Remoort MANUFACTURING CO.
1310 Meyers Road, Lombard, Illinois

If you write maker identify as IEN - 12889

Standard . . . or Special

• You can depend on Albion Industries to meet your most *exacting* requirements for rugged, dependable industrial casters . . . in dozens or thousands.

Albion produces better, yet more economical casters for every conceivable industrial operation. Investigate their advantages today . . . make Albion your *one dependable source* for casters and wheels.



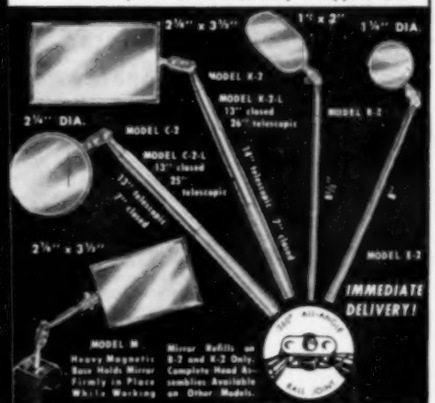
ALBION INDUSTRIES, Inc.
Albion, Michigan

If you write maker identify as IEN - 12890

WORK INSPECTION MIRRORS

speed production • prevent accidents

- Exclusive All-Angle Ball Joints
- Precision Engineered
- Replaceable Copper-Backed Clear View Mirrors
- Folds and Fits into Pocket
- Many Sizes Cover Practically All Applications



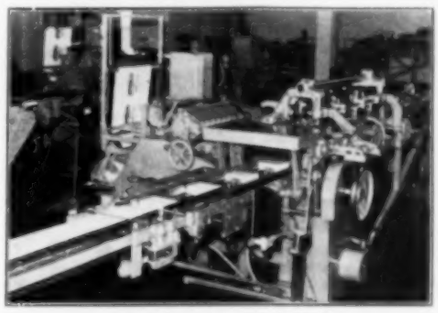
WRITE FOR YOUR COPY OF COMPLETE ILLUSTRATED CATALOG 1

ULLMAN PRODUCTS CORPORATION
156 PROSPECT AVE., BROOKLYN 15, N. Y.

If you write maker identify as IEN - 12891

PACKAGING . . Automatic machine wraps 160 frozen food cartons per min.

Source: PACKAGE MACHINERY CO.
Longmeadow, Springfield, Mass.



Supplements previous machine designs

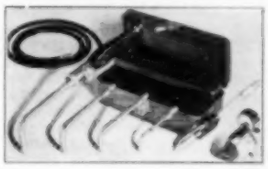
Model FF-H is a new automatic machine in the company's line of packaging equipment. It has been designed primarily to wrap the standard size of frozen food carton. It can be adjusted to take cartons measuring 1⅝ to 1⅞ in. in height, 5 to 5⅞ in. in length, 4 to 4¼ in. in width. Change can be made in about 15 minutes. The machine will handle any type of wrapping material normally used for frozen food cartons, particularly high gloss waxed paper and cellophane.

Cams are employed in the place of crank arms. Accelerating actions have been designed so loads are uniform during the complete machine cycle. Load tests show no peak loads. Design of the paper feed into the machine prevents slippage of intermittently fed wraps. Portions of the paper feed unit are removable for washing and cleaning. Individual packages are carried through the folding line of the machine on a "lift up" overhead transport chain assembly. It is counterbalanced so only a little effort is required to expose the folders. The arrangement minimizes shut down time for clean up when damaged cartons enter the machine.

If you write maker identify as IEN - 12892

SOLDERING . . Torch equipment also for heating and light brazing

Source: LINDE AIR PRODUCTS CO.
30 E. 42nd St., Room 308, New York 17, N. Y.



Utility outfit

New assembly of air-acetylene torch control handle, four open flame torch stems and a pointed copper soldering iron are included with an acetylene pressure regulator in a new Prest-O-Lite 5-IN-1 outfit for soldering, heating, light brazing.

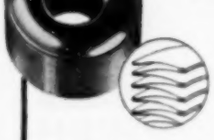
The regulator is adjustable to deliver acetylene at any pressure to 13 pounds. Hose with standard "A" left hand thread fittings and a metal carrying case complete the assembly. A plastic roll-up kit in which to carry the handle, stems, regulator and hose can be supplied in place of the metal case.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

If you write maker identify as IEN - 12893

Can You Use BELLMETS?*

*Metallic Diaphragm BELLOWS with Specific Mechanical, Electrical and Thermal Properties



- Convolutions electrically insulated from each other
- Contour construction to resist pressures exceeding 500 PSI
- Materials heat resistant to 500° F.

Bellmets represent a unique development in welded diaphragm bellows. All welds either on the inside or outside diameter (depending on whether operating pressure is to be internal or external) are replaced with a dielectric bonding material. The bonds are strong, slightly resilient, highly resistant to heat, and insulate each end of the bellows from the other.

Bellmets have already solved problems in engine noise attenuation, pressure switch simplification, circuit control at high pressures. Wherever heat, pressure, or electrical characteristics present a problem, job-engineered Bellmets—in a wide range of sizes and specifications—may prove the ideal solution.

WRITE TODAY for complete information, outlining your specific problem or interest.

BREEZE CORPORATIONS, INC.
41 South Sixth St., Newark, N. J.

If you write maker identify as IEN - 12894

one million LBS. SPEED PATCH

WORLD'S FINEST, FASTEST, FLOOR FIXER!

SHIPPED TO A SINGLE CUSTOMER

Actually 1,044,014 lbs., Speed-Patch have been purchased by this ONE company. And other customers add up to *more millions* of pounds of proof that Speed-Patch knows no equal. Write for the full Speed-Patch story TODAY!

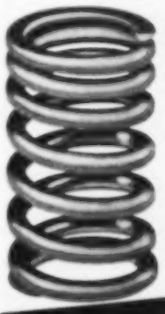
ROCK-TRED Corporation
Manufacturers of a Complete Line of Bonding Approximate Materials
7640-7650 North St. Louis Avenue • Skokie, Illinois
In Canada: Rock-Tred Corporation (Canada) Limited, Toronto 5

If you write maker identify as IEN - 12895

SPRING WIRE

Absolutely uniform in gauge, finish and mechanical properties

ROEBLING is about the largest specialty wire manufacturer in America . . . and Roebling uniform quality always helps cut preparation time and boost production for users.



Typical of Roebling specialty products are mechanical spring wires including hard drawn, soft, annealed or oil-tempered M.B., H.B. and Extra H.B.; music wire; upholsterers' spring wire and valve spring wire . . . all in a full range of mechanical properties and finishes.

We can give you fast deliveries to meet your needs, right now! John A. Roebling's Sons Company, Trenton 2, N. J.

ROEBLING

If you write maker identify as IEN - 12896

Dial the combination of properties you need

Synthane laminated plastics have a wide variety of valuable mechanical, chemical and electrical properties—and have them in combination. Synthane combines, in one easy-to-machine material, light-weight, strength, chemical and moisture resistance, hardness, toughness, denseness, high dielectric strength, high dielectric constant and low power factor. And many more. Why not find out more about this unusual material today? Just clip and mail the coupon for the complete Synthane Catalog.

SYNTHANE

Manufacturers of laminated plastics

SHEETS
RODS • TUBES
MOLDED-LAMINATED
MOLDED-MACERATED
FABRICATED PARTS

SYNTHANE CORPORATION
South River Road, Oaks, Pa.

Gentlemen:

Please send me the new Synthane Catalog at once.

Name_____
Address_____
City_____ Zone____ State_____

If you write maker identify as IEN - 12897

Dollar and Cents Angle

on Fafnir Sealed Ball Bearings

Figure it out yourself . . . you may be able to cut manufacturing costs by using one of the several types of Fafnir Sealed Ball Bearings.

These bearings simplify assemblies, cut out machinery operations and eliminate extra parts otherwise needed to provide and retain lubricants.

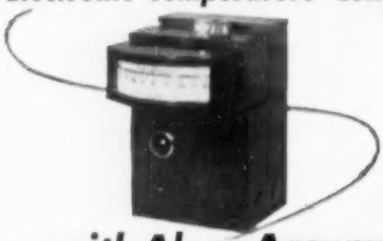
Find out . . . call in a Fafnir representative. The Fafnir Bearing Company, New Britain, Conn.

FAFNIR
BALL BEARINGS

MOST COMPLETE LINE IN AMERICA

If you write maker identify as IEN - 12898

Electronic Temperature Control



...with Alnor Accuracy

Alnor, pioneer in the field of electronic temperature instruments, brings you automatic, precise temperature control for heat-treating furnaces, bake ovens—in fact, for any heating device whether electrically heated or fuel fired. It's the Alnor Temperature Controller—simple in design and operation, its accuracy proved on thousands of installations in many industries.

Easily and quickly installed, this instrument is ready to give you accurate controller service on new or existing heating equipment temperature—you merely set the pointer at the desired temperature and forget your indicating and controlling problems. But find out for yourself how Alnor accuracy and dependability can serve you in controller service; write today for complete details on the Alnor Temperature Controller . . . Alnor accuracy at a price you can afford. Illinois Testing Laboratories, Inc., Room 517 420 N. La Salle Street, Chicago 10, Illinois.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

If you write maker identify as IEN - 12899

You've heard of

ARMORPLY®...

NOW SEND FOR YOUR

Free Sample

Manufacturers in many fields have already found that Armorply is a real money-saver: time-saver . . . product-improver!

This revolutionary metal-faced, waterproof plywood panel is stronger than either wood or metal alone. Faced with almost any metal, of any thickness, with any commercial finish, it is made to your order, to meet your specifications, to save you fabrication time and money.

Truck bodies, refrigerators, elevator cabs, tote boxes, and many other products are now being made better at less cost with Armorply. Investigate the possible advantages of using Armorply for your product. Mail coupon today.

UNITED STATES PLYWOOD CORPORATION IEN 11-52

World's Largest Plywood Organization
55 West 44th Street, New York 36, N. Y.

We are interested in Armorply for _____

Please send a free sample and data.

Name _____

Address _____

City _____ State _____

If you write maker identify as IEN - 12900

STRIPPING . . Electric heater softens paint or varnish for removal

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

About $15

Weight is 2¼ lb. and overall length is 6½ in. for this new sled type portable electric paint stripping heater. It plugs into a 110-volt power line to supply current to its 1,000-watt Calrod tubular heater that mounts between the housing runners. A handle on the back of the housing and plug equipped extension cord complete the assembly.

The heater is moved along on its runners to soften and blister old paint for removal with a putty knife. The runners keep the element at correct distance from the surface. Sufficient heat is supplied so paint can be removed as fast as the operator can scrape it off.

If you write maker identify as IEN - 12901

RECTIFYING . . Selenium assembly for constant voltage on changing load

Source: LA MARCHE MFG. CO.
6523-27 Olmsted Ave., Chicago 31, Ill.

Constavolt trade names the company's new line of rectifiers in which the assembly consists of a transformer, a reactor and a selenium rectifier, enclosed in a rectangular housing. The company is prepared to supply the equipment for specified ac. input. The output ranges from 10 amp. to 7 kilowatt on 6 to 220 volts.

Identify as IEN - 12902

No need to purchase distilled water for your storage batteries if you purchase a new squeeze-bottle-filter made by Crystal Research Laboratories in Hartford. The squeeze bottle part is made of Bakelite's polyethylene plastic. You fill it with regular tap water. Then you screw on the filter unit and squeeze.

Out comes chemically pure water good for any battery. The filter contains ion exchange chemicals to treat the water. Two, three and four-ounce sizes are available with capacity from 20 to 30 gallons of water. Three bottle sizes list at $1.75 to $3. Refills are $1.25 to $2.25.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12903

THE EASY WAY TO TELL!

Changeable Letter Bulletin Board
The message you want—when you want it!

DAV-SON INDUSTRIAL BULLETIN BOARDS

Employee bulletins, safety messages, production records all get maximum attention when you use DAV-SON Bulletin Boards. There is a DAV-SON Bulletin Board for every purpose.

- Changeable Letter Boards
- Cork Back Pin-Up Boards
- Indoor and Outdoor Types
- Metal or Hardwood Frames
- With or Without Locking Glass Doors
- Illuminated and Non-Illuminated
- Special Safety Displays
- Single and Multiple Panels

Cork Back Boards. For letters, photos, posters, etc.

Write for complete information regarding your requirements.

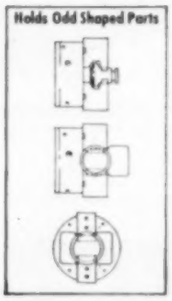
A.C. DAVENPORT & SON, INC.
ESTABLISHED 1933
311 N. DESPLAINES ST., CHICAGO 6, ILL.
MANUFACTURERS OF BULLETIN BOARDS FOR EVERY USE

If you write maker identify as IEN - 12904

Buck ADJUST-TRU CHUCKS

NEW 2-JAW AVIATION CHUCK

Holds Odd Shaped Parts



THIS is the slickest way ever devised to hold irregular shaped parts for duplicate machining operations within .0005 precision.

The master jaws have *soft* top jaws which you machine to hold your specific work, then harden if you wish. That's not new. But the way the Adjust-Tru principle saves time on accurate rechucking is truly amazing. The jaws move in and out simultaneously to grip the work with a *single-pinion* action—just like any scroll chuck.

You make but one adjustment for precision when you start your run—then re-chuck with scroll chuck speed without further adjustment.

Ask for a catalog with full details.

BUCK TOOL COMPANY
1116 Schippers Lane
KALAMAZOO, MICHIGAN

If you write maker identify as IEN - 12905

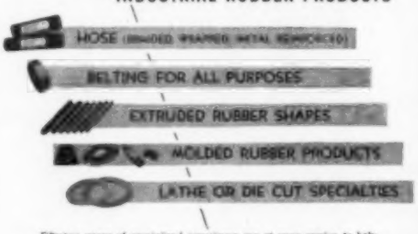
make your product . . .

LOOK BETTER
WORK BETTER
SELL BETTER

design with—

REPUBLIC

INDUSTRIAL RUBBER PRODUCTS



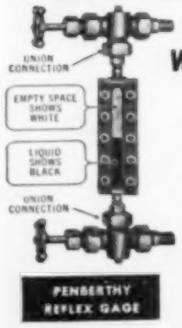
Fifty-two years of specialized experience are at your service to help you plan new products or develop bids.
Write, phone or wire us today about your requirements. Address: Republic Rubber Division, Youngstown, Ohio. Phone 3-2131

REPUBLIC RUBBER DIVISION
THE REPUBLIC RUBBER & TIRE CORPORATION, YOUNGSTOWN 1, OHIO
INDUSTRIAL RUBBER PRODUCTS

If you write maker identify as IEN - 12906

PENBERTHY LIQUID LEVEL GAGES

Can be Removed and Replaced Without Shutdown



Union connections between the gage and the valves permit removal of gage for repairs without shutting down the equipment. Just close the valves, uncouple the unions and remove the gage. The convenience of this is obvious. When glasses have to be replaced or repairs made, it is not necessary to work in an awkward position or to shut down. Another advantage: a gage needing repairs can be replaced immediately by a spare and the repairs made at leisure. There are many other reasons for the superiority of Penberthy Liquid Level Gages; ask for Catalog 35.

PENBERTHY INJECTOR COMPANY
DIVISION OF THE BUFFALO-ECLIPSE CORPORATION
Established 1886 DETROIT 2, MICHIGAN Canadian Plant, Windsor, Ont.

If you write maker identify as IEN - 12907

MERRILL MATERIALS HANDLING DEVICES

MERRILL BROTHERS
56-14 ARNOLD AVENUE MASPETH, N. Y.

If you write maker identify as IEN - 12908

LOOK JOE !... Make These Cuts with a CLIPPER...Let's Stop "DOWN-TIME" Delays!

Any SPECIAL SHAPES
SKEWS, SPLITS, ANGLES, SOAPS

CUT IN SECONDS WITH A DUSTLESS... CLIPPER MASONRY SAW

NINE MODELS PRICED FROM $265

PERFECTLY SMOOTH CUTS ELIMINATE HIDDEN FRACTURES, EXCESS MORTAR & DOWN-TIME

Speed REPAIR or CONSTRUCTION of your Furnaces, Kilns and Boilers by using a CLIPPER MASONRY SAW

DUSTLESS...MASONRY CUTTING

With the MODEL HD CLIPPER you can choose your cutting method...cut DUSTLESS (wet) in confined areas or DRY when DUST is not a problem. Remember too, there are NINE Clipper Models designed to perform with smooth simplicity and flexibility.

Free Trial

The outstanding policy of FREE TRIAL has been in effect since Clipper invented the world's first masonry saw. Only thru this CLIPPER FREE TRIAL are you guaranteed ... ACTUAL TEST ON THE JOB ... FULL SATISFACTION ... NO OBLIGATION!

PATENTED CLIPPER FEATURES

AUTOMATIC BLADE PRESSURE — Makes your blades last longer... Because Equalizer Spring Automatically cushions blade pressure whether cutting HARD or SOFT materials, gives greater blade economy.

SELECT-A-NOTCH — One man easily adjusts Cutting Head to desired height ... whether cutting 12" or 1" material. Operator's hands evenly guide. Weight supported by rear flap.

SAVE-A-BLADE DIAL — Just turn the Save-A-Blade Dial to the material hardness and the pressure Equalizer Spring automatically sets the tension—guarantees faster cutting and longer blade life.

Clipper

FOR CUTTING CONCRETE—ASPHALT
BUILDING FLOORS—STREETS—WALKS
CLIPPER CONCRETE SAWS...
5 MODELS—GAS OR ELECTRIC POWER

MANUFACTURING CO.
KANSAS CITY 8, MISSOURI
Cable Address: Clipper KC Mo.

PITTSBURGH PHILADELPHIA
ST. LOUIS SAN FRANCISCO
CLEVELAND CINCINNATI
DETROIT ATLANTA
HOUSTON WASHINGTON, D.C.
AUSTIN, TEX. BOSTON
CHICAGO BIRMINGHAM
NEW YORK LOS ANGELES

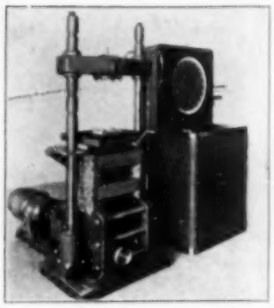
TEAR OUT AND MAIL!

CLIPPER MANUFACTURING COMPANY
33 E. 20th St. Kansas City 8, Mo.
Send FREE Information and Literature on:
☐ NEW CLIPPER MASONRY SAWS ☐ CLIPPER CONCRETE SAW
☐ DUSTLESS Model HD ☐ FREE TRIAL
ET-Ind.
NAME
ADDRESS
CITY STATE

If you write maker identify as IEN - 12910

TESTING .. Universal machine employs Baldwin-Emery SR-4 load cells

Source: BALDWIN-LIMA-HAMILTON CORP. Paschall Post Office, Philadelphia 42, Pa.



Accuracy to 0.2 per cent

Loading can be established, in tension or compression, to 25 ton in this new Model-FGT Baldwin-Emery SR-4 testing machine by means of a single enclosed reversing screw rotated by a 2-hp. motor. The motor is controlled by electronic equipment for a stepless speed range of 300 to 1 or a standard loading speed of 0.025 to 9 in. per minute. Load is taken, through the work, on two load load cells at the base of the two vertical tie rods. Each cell rates 15 ton. Indications from the load cells are amplified to provide readings.

Three load ranges are maximum at 1, 10 and 25 ton on a separate 24 in. dial. Lower ranges can be obtained by fitting a detachable load cell on the crosshead and connecting it into the load indicating dial.

Maximum stroke is 8 inches. The machine table measures 20 by 20 inches. Maximum vertical space is 24 in. for both tension and compression tests. Clearance between the columns is 21 inches. The machine can be set to maintain constant load, constant strain, constant rate of loading, constant strain rate, to determine values of creep, rupture, and relaxation properties of the materials being tested. Printing equipment can be specified to record extension under load, off-set yield strength, ultimate strength. These are controlled by electronic devices that "trigger" the printer.

If you write maker identify as IEN - 12911

PRINTING .. Motor driven machine prints on a continuous line of labels

Source: AMERICAN TAG CO. 149-53 Cortlandt St., Belleville 9, N. J.

Helps in the shipping room

American 400 is a new motor driven machine employing a fluid duplicating process in which a master is prepared in a typewriter, or by hand with a stylus, using a carbon-like paper backing that transfers the characters to be printed to a master sheet. This master is inserted into the machine. It operates in rotary action on labels passing beneath it in a continuous run from a fan fold supply at one side to a similar fold at the other.

The machine will produce 430 imprinted tags or labels per minute. It will print 14 lines of type or as many as 154 characters horizontally or vertically. Overall dimensions are about 14 by 10 by 11 inches. Weight is about 45 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 89

If you write maker identify as IEN - 12912

"Save time in Shipping with the 5-ACTION machine ... in the Office, too."

FORCE 5 ACTION NUMBERING MACHINE

new.

Now it's yours for Shop and Office.

Consecutive, duplicate, triplicate, quadruplicate and repeat movements all in one machine. Lightweight aluminum frame, comfortable plastic handle, 6 figure wheel capacity. Gothic or Roman figures.

Write for catalog E.

THREE QUARTERS OF A CENTURY'S SERVICE

WM. A. FORCE & COMPANY, INCORPORATED
216 NICHOLS AVE., BROOKLYN 8, N. Y.
Sales Offices: New York, Chicago, San Francisco, Montreal

If you write maker identify as IEN - 12913

KUSHION-TORQ
WHAT IT WILL DO FOR YOU

The Cushion Torque of Kanti-Lever Couplings absorbs the hammer blows of sudden or reversing loads and dampens the torsional and radial vibration that causes wear, fatigue and sometimes failure of Motors, Speed Reducers, Ball Bearings and productive machinery. No other coupling is like the Kanti-Lever: It has a circular series of laminated Cantilevers of 200,000 lb. steel, operating in slots, the tapered sides of which automatically stiffen the Cantilevers under increased overloads. Special end play up to four inches is possible without end thrust. The outer periphery of the Kanti-Lever is available as a brake drum for quick-stopping or reversing machinery.

Send for Bulletin No. 28-N.

Kanti-Lever Couplings

4,000,000 h.p. in Use

MFRS. OF SECTIONAL STOCK RACKS

BROWN ENGINEERING CO.
122 NORTH 3RD ST. READING, PENNA.

If you write maker identify as IEN - 12914

PROTECT YOUR PRODUCTS DURING SHIPMENT with S·S·White PLASTIC DUMMY SHIPPING PLUGS AND CAPS

Made of tough, non-brittle plastic. Available from stock molds in a wide range of sizes. Details in BULLETIN P-4601. Copy mailed on request

CONTRACT MOLDING in all standard thermoplastic and thermosetting materials.

THE S·S·White PLASTICS DIVISION
DENTAL MFG. CO.
Dept. HP, 10 East 40th St. NEW YORK 16, N. Y.
WESTERN DISTRICT OFFICE: Times Building, Long Beach, Calif.

If you write maker identify as IEN - 12915

"We keep a ton of B&W KAOCAST on hand ... mold it in a hurry when we need it ... use it for all kinds of refractory jobs!"

Yes, B&W Kaocast is versatile. This 3000F refractory castable speeds repairs ... eliminates need for large inventory of special shapes. Discuss easy-to-use Kaocast with your B&W Refractories Engineer.

THE BABCOCK & WILCOX CO.
Refractories Division
GENERAL OFFICES: 161 EAST 42nd ST., NEW YORK 17, N. Y.
WORKS: AUGUSTA, GA.
R-429

If you write maker identify as IEN - 12916

HINGED PLATEGRIP
BELT FASTENER No. 500

For Heavy Conveyor Belts of Changing Length

These heavy duty belt fasteners make a strong, flexible joint in conveyor belts, belts of any width and of from 1/8" to 1/2" thickness. They offer special advantages in mines, quarries or industrial setups where length or position of belt is frequently changed, because sections can be removed or added or will joints are opened for this purpose by simply pulling out the hinge pin.

Easily and quickly applied on the job or in the shop. Special design gives deep compression into belting and smooth, flush joint.

Write for circular

ARMSTRONG-BRAY & CO.
5180 NORTHWEST HIGHWAY CHICAGO 30

If you write maker identify as IEN - 12917

STANDARDIZE WITH OHIO
STOCK GEARS AND SPEED REDUCERS

• Today's expanding production calls for quality standards—that's why experienced designers and maintenance engineers recognize the importance of OHIO Stock Gears and Reducers.

"Standard Stock" items save vital days and weeks.

"Standard Stock" is economical — eliminating extra cost "Made to Order" specials.

"Standard Stock" means faster replacement.

Those men responsible for today's high speed emergency operations specify and depend on OHIO Stock Gears and Reducers. Investigate the possibilities of adopting OHIO Gear to your product. Call your nearest distributor or write direct.

ESTABLISHED 1915
THE OHIO GEAR COMPANY
1348 EAST 170th STREET
CLEVELAND 10, OHIO

OHIO GEARS

If you write maker identify as IEN - 12918

ANGLE STEEL No. 250 SERVICE CART
Time Saving-Easy Pushing

A Materials handling, time saving Cart for transporting tools, production items and supplies. Used extensively in stock rooms, stores, garages, shipping and receiving departments. Furnished with two 5" dia. swivel and two 5" dia. stationary rubber-wheeled casters for easy pushing.

No. 250—30" long—16" wide—32" high.
Shelves—18 gauge sheet with 3" turn up.
Corner posts—1½"x1½"x¼" angle steel.
Finish—Olive green enamel.
Shipped K.D. with bolts, nuts, lock washers, for easy assembly.

ANGLE STEEL, Inc.
Dept. 3 Plainwell, Michigan

SEND FREE Literature ... we're interested in: ... Shop Desks ... Benches ... Service Carts ... Cabinets ... Stools ... Tool Stands

Company

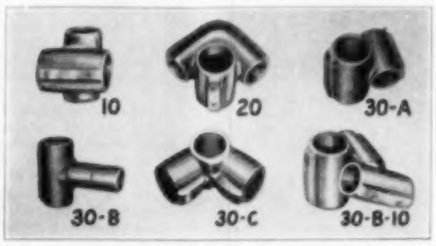
My Name Title

Address

If you write maker identify as IEN - 12919

FABRICATING . . Slip on fittings to assemble pipe structures, railings

Source: HOLLAENDER MFG. CO.
3839 Spring Grove Ave., Cincinnati 23, Ohio



Specifications, illustrations in Nu-Rail Bulletin

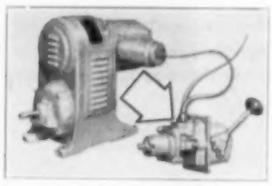
Five basic fittings, exclusive of floor and wall flanges and an end closing plug, make up the company's new standardized line of Nu Rail slip on fittings. Each is made of aluminum alloy and is equipped with socket set screws to secure it in position. Sizes range from ¾ by ¾ in. to 2 by 2 in. with intermediate equal-size and reducing fittings to include 1 by ¾ in., 1¼ by 1 in., 1½ by 1¼ in., and 2 by 1½ inches.

Combinations can be made to assemble pipe railings, racks, guard rails, shelving, tables, work benches, scaffolds, area enclosures, shelving, towers. No pipe threading is required. Load carrying ability is that of the pipe.

If you write maker identify as IEN - 12920

DRIVE . . Variable speed unit, ac. motor and V-belt transmission

Source: U. S. ELECTRICAL MOTORS INC.
202 E. Slauson Ave., Los Angeles 54, Calif.



Uses plant air pressure

Remote control by means of a valve and air pressure at 60 or 100 lb. is now available for application on the company's line of Varidrive variable speed assemblies. The valve positions in a desired location and connects by pipe or tube to an air operated plunger assembled on the speed changing mechanism of the drive. The valve is available for operation by lever, cam, wheel or pedal. Application can be made on any of the company's drives in the Varidrive line.

Identify as IEN - 12921

Vacuum process is available to remove air from paper stock moving to a paper making machine. It is known as the Deculator System and is custom designed for each installation. Stock is fed through a distributor into a cylindrical receiver where the air is removed by high vacuum. The deaerated stock is then pumped to the head box inlet on the paper machine. Rotareaed Corporation of Bronxville, N. Y. will give you particulars.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12922

PUSH BUTTON INSULATION RESISTANCE TESTING
with VIBROTEST

• RANGES TO 50,000 MEGOHMS
• NO CRANKING • NO LEVELING
• ALL-ELECTRIC • RUGGED
• FULLY PORTABLE • ACCURATE

VIBROTEST is built throughout to take insulation resistance testing FAST, EASY and ACCURATE for you. No laborious cranking... No mechanical parts to get out of order... Only two binding posts for ALL tests. Several Models have A.C. and D.C. volt ranges, as well as low resistance ohmmeter.

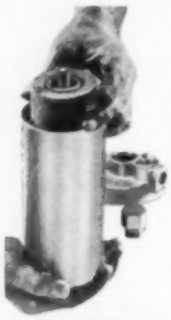
This is an instrument that makes insulation resistance testing a "push-button" affair! Ask for more information.

WRITE FOR BULLETIN 2-A

ASSOCIATED RESEARCH, Incorporated
"Precision Instruments Since 1920"
3762 WEST BELMONT AVENUE • CHICAGO 18, ILLINOIS

If you write maker identify as IEN - 12923

Read This. . . to Reduce This



Cuno MICRO-KLEAN Filter cuts cartridge replacement in *half* and is *guaranteed* to remove 100% of all solids larger than specified* plus a large percentage down to 1 micron. Free bulletin tells how to get positive micronic cleaning of a wide range of industrial fluids . . . at a new low cost for cartridges and maintenance.

Write for Bulletin MK-035. Cuno Engineering Corporation, Dept. 6910 M, South Vine Street, Meriden, Connecticut.

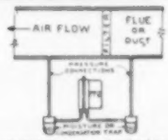
*10, 25 or 50 microns.

CUNO

Fluid Conditioning
Removes More Sizes of Solids from More Types of Fluids

If you write maker identify as IEN - 12924

CONTROL FROM MINUTE CHANGES IN THE RELATIONSHIP OF TWO PRESSURES



Illustrated above is a standard application whereby the Type PPQ functions to open (or close) an electrical circuit from a variation in pressure differential due to a clogging filter.

Mercoid Type PPQ Diaphragm Differential Pressure Controls operate from minute changes (.03" water) in the difference between two pressures.

Ranges to cover most applications (inches of water) 6" vacuum to 6" pressure, and 30" vacuum to 30" pressure. Available for various circuit arrangements.

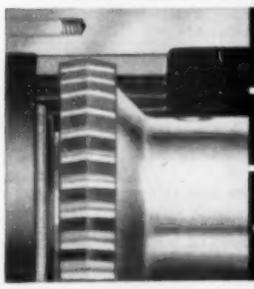
Electrical Capacity—0.3Amp. at 115V., A.C. or 0.15 Amp., at 230V., D.C. Can be furnished in explosion-proof or weather-proof cases.

WRITE FOR BULLETIN CA-3P

THE MERCOID CORPORATION
4205 W. BELMONT AVENUE, CHICAGO 41, ILLINOIS
New York: 205 East 42nd St. Philadelphia: 3137 N. Broad St.

If you write maker identify as IEN - 12925

AJAX DIHEDRAL COUPLINGS



most MISALIGNMENT CAPACITY

least BACKLASH

all GEARS HARDENED TO 50 TO 55 ROCKWELL C

Exclusive Ajax Dihedral tooth shape provides for maximum misalignment with tooth clearance (backlash) kept to oil film requirements. Positive oil seals keep lubrication in and dirt out. Write for catalog.

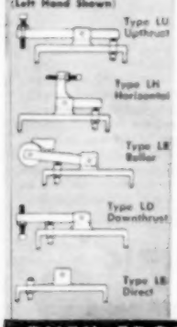
AJAX FLEXIBLE COUPLING CO. INC.
Incorporated 1920
WESTFIELD, NEW YORK

If you write maker identify as IEN - 12926

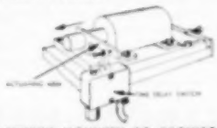
NEW CYLINDER TIME DELAY CONTROL SWITCH

INCREASES APPLICATION . . . WIDENS USE OF CYLINDER POWER

For Any Type Actuation Left or Right Hand (Left Hand Shown)



Pneu-Trol Time Delay Switches provide independent hydraulically controlled adjustable time dwell between ¼ and 60 seconds in 20 to 1 ratios. Readily mounted on machine for cylinder dwell at a positive stop. Compactly designed—a simplified low cost answer to electrical time dwell control of any air or hydraulically operated machine movement such as press work, burnishing, coating, quenching, metal-cutting, etc. Ideal for automatic feeders.



SWITCH MOUNTED TO PROVIDE DWELL AT END OF POWER STROKE

Write for descriptive literature and complete details.

PNEU-TROL DEVICES, INC.
1438 N. Keating Ave. Chicago 51, Illinois

If you write maker identify as IEN - 12927

NEW many purpose individual Vulcanaire

DUST COLLECTING UNITS

Use on surface and other grinders where any kind of grinding dust must be removed. Salvage diamond dust.

Inexpensive, compact units, with no moving parts.

Operated from your present air supply.

Installed in a few minutes, eliminating need for costly centrally located dust collecting systems.

The collector element is mounted on the side of the machine. Quickly cleaned, requiring no refills.

Vac-suction pick-up device (vacuum nozzle) is mounted on the grinding wheel guard or close to grinding wheel on other applications. This mounting permits constant contact with dust as the wheel is moved up or down.

A simple needle valve operates the unit, and can be shut off when machine is not in use.

Available in two sizes: 700 series for grinding wheels, 7" dia. or less—200 series for wheels 2" dia. or less.

"SALVAGE INDUSTRIAL DIAMONDS FOR DEFENSE"*

*That is the title of the National Production Authority's booklet which describes the growing critical shortage of industrial diamond supplies.

The shortage will soon result in idle machine tools, and lost defense production unless we straightway begin to conserve grinding wheels and salvage diamond dust. The N.P.A. fully and helpfully explains the methods for doing these things.

Request this N.P.A. booklet on your letterhead and Vulcan will be glad to send it to you. You will also receive literature on the versatile Vulcanaire Dust Collector which promotes health in your plant and turns dust into money.

It's made by the makers of Vulcanaire
The jig grinding attachment

Write for these

Vulcan Tool Co.
734 LORAIN STREET • DAYTON 10, OHIO

If you write maker identify as IEN - 12929

PUMP . . Pneumatic, surge controlled, to deliver fluid finishing materials

Source: WILKINSON EQUIPMENT & SUPPLY CORP.
6956-60 Wentworth Ave., Chicago 21, Ill.

Drum to guns direct

Enamel, lacquer, paint or special finish can be delivered to supply lines leading from the original fluid container to as many as three spray guns by this new pump and control. Application can be made in any drum with a 2-in. bung. The fluid can be recirculated through the ¾-in. vent opening in the drum to provide a mixing action.

Pressure in the atomizing air line to the guns is employed to control the pumping action by shutting it off when the guns are in closed position and restarting the pump when the guns are again put into operation. As a result, the spray guns operate without surge delivery of excess fluid.

If you write maker identify as IEN - 12930

FIRST AID . . Oil base liquid for spray application on minor burns

Source: DRUG PRODUCTS CORP.
15010-14 Kinsman Road, Cleveland 20, Ohio

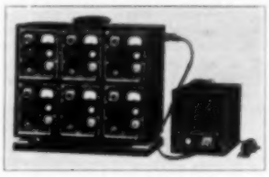
Container holds four ounces

Alke-Mist is a new vegetable-oil-base liquid containing a germicide for application on minor burns. It is packaged in a pressurized container employing freon as the propellant. It is delivered as a fine mist when a push button on top of the container is depressed. The mist floats over the burned area to provide relief from pain and protection against infection.

If you write maker identify as IEN - 12931

TESTING . . Electronic amplifier assembles 6 channels and power supply

Source: YELLOW SPRINGS INSTRUMENT CO.
P. O. Box 106-A, Yellow Springs, Ohio



Specifications on request

Model 201-A is a new amplifier consisting of six individually excited three-stage single-channel amplifying units with output metering and overload indicating circuits and with linear and integrated amplification to provide for use of a variety of pick-up devices. A separate electronically regulated power supply is included to provide ac. and dc. power to all of the channels. A shock mounted cabinet, with power plugs to insert the single channel amplifier units and the necessary power and test cable assemblies, completes the instrument.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12932

CUT IDENTIFICATION COSTS

with BRADY Printed Self-sticking ROLL TAPES

SAVE OPERATORS TIME • ELIMINATE WASTE MOTIONS • GET QUICK, POSITIVE IDENTIFICATION

Label parts, pieces, assemblies, materials, etc., with Brady Printed Tape. Sticks to any clean, dry surface without moistening. Applied by hand or automatic dispenser.

Any wording, numbers, letters, trademarks or symbols printed to your order on cellophane, acetate fibre, paper or cloth tapes to fit your job requirements.

Choose from a variety of standard colors, roll lengths and widths.

WRITE FOR Free SAMPLES AND USEFUL CATALOG

DISTRIBUTED IN 125 PRINCIPAL CITIES
MANUFACTURERS OF SELF-STICKING PRODUCTS

W. H. BRADY COMPANY
769 W. GLENDALE, MILWAUKEE, WISCONSIN

If you write maker identify as IEN - 12933

MACHINE DESIGNERS!

GET THE FULL STORY ON HANNIFIN'S

NEW Pilot-Master Air Control Valves!

HERE'S WHY MAINTENANCE MEN PREFER THEM . . .

FEWER VALVES TO STOCK
Use same valve 2-way or 3-way, normally open or normally closed.

FEWER PARTS TO STOCK
Unique cartridge construction makes "insides" easily replaceable.

INDUSTRIAL SOLENOIDS
Long-lasting, easy to change coils to any standard voltage.

All Sizes From ¼" to 1¼" I.P.S.
Pressures From 15 to 150 P.S.I.
Write for Bulletin 231 and get the complete story!

HANNIFIN
Hannifin Corporation • 1107 S. Kilbourn Ave. • Chicago 24, Ill.

If you write maker identify as IEN - 12934

Corrosite

Protective Plastic Paint – via GRAYBAR

FREE BOOKLET tells why Corrosite protects where other coatings fail

For practical, long-term protection against corrosion, rust, erosion and rot, it will pay you to investigate Corrosite—the amazing protective plastic paint now distributed by Graybar.

Vinyl-base Corrosite can be brushed, sprayed or dipped. It dries in one hour (by solvent evaporation) to form a tough, lustrous plastic film that is impervious to acids, alkalies, alcohols and brine.

Corrosite bonds both physically and chemically to most surfaces—protects metals against chemical and atmospheric corrosion . . . seals and waterproofs concrete and masonry.

Full details on Corrosite protective coatings are contained in Corrosite bulletin 201. For your copy write: *Graybar Electric Co., 420 Lexington Ave., New York 17, N. Y.* 208-1211

Call Graybar *first* for . . . Everything Electrical Graybar

If you write maker identify as IEN - 12935

BARCOL
ELECTRIC OPERATOR

FITS ALL JOBS

The main advantage of this electric door and gate operator is that it is almost "universal" in application. It will operate all kinds of overhead, swinging, sliding, and steel rolling doors, and sliding gates. This means lower first cost and lower maintenance cost because of requiring a minimum of repair parts and spare units.

Write for Literature

This new brochure, just off the press, completely describes the features and uses of Barcol Electric Operators. Write for your copy today!

Sales and service representatives in principal cities

BARBER-COLMAN COMPANY
114 MILL ST., ROCKFORD, ILLINOIS

If you write maker identify as IEN - 12936

Fast...Sure...Time Saving Way
TO SEAL WELD SEAMS!

VERSATAL "POWER RAM"
Air Operated Follower Plate Pump

- Completely empties and cleans the sides of a 55 gal. ion drum
- Stops contamination — does not allow air to reach the material
- Prevents material from drying out or "skinning over"
- Saves important money on barrel cleaning
- 5836 lbs. atmospheric pressure on the materials assures safe, positive prime

Free — write now for literature giving full data. Address Alemite, Dept. B-112, 1830 Diversey Pkwy., Chicago 14, Ill.

SW

ALEMITE Versatal

If you write maker identify as IEN - 12937

IMMEDIATELY AVAILABLE!
MUND PACKAGED STEAM BOILERS!

Stress Relieved before Shipment
Fast Firing
Complete Accessibility
Fully Automatic Controls
Overload Capacity for Long Life
Easily Cleaned
Guaranteed
Completely Packaged
1-1/2-50 H.P.*
Gas or Oil Fired

Right NOW...you can have that efficient standard-make steam boiler you need. You'll find our warehouses throughout the country continuously well stocked with packaged ready-to-ship and ready-to-use boilers. 1-1/2-50 H.P. *Mund inclined water-tube, Scotch-Mund fire-tube, and other type units. No brick-work required. Insulated. A.S.M.E. construction. And...when you order a Mund, you'll like the way factory-trained service-jobbers provide quick installation and help you to maintain continuous operating efficiency. Why not fill in the coupon now?

NEED HELP? SEND COUPON!

MUND BOILERS, INC.
DALLAS, Texas
LOS ANGELES, Calif.

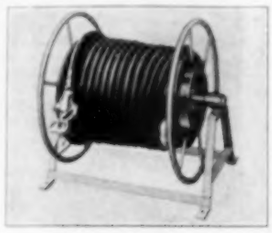
MUND BOILERS, Inc., 1600 N. Indiana St. Los Angeles 63, California
☐ Please send your representative around to discuss our boiler problem (no obligation)
☐ Please send me your catalog information
I am interested in a ____ type boiler of ____ H.P.
☐ Oil fired ☐ Gas fired
NAME ____
ADDRESS ____
CITY ____
STATE ____

*Mund manufactures a complete line of boilers for industry with ratings up to 330 H.P.

If you write maker identify as IEN - 12939

RETRIEVING . . Hose reel connects to water line through trunnion

Source: WIRT & KNOX MFG. CO.
2302 W. York St., Philadelphia 32, Pa.



Carries pressure on reel

Two sizes in the company's new Type-FD quick-acting continuous-flow hose reel measure 10 and 20 in. between the flanges by 24 in. in flange diameter. The reel will take 150 ft. of ¾-in. hose or 100 ft. of 1-in. hose in the 10-in. width. It will take the same lengths of 1¼ or 1½-in. hose in the 20-in. width. Main drum diameter is 10 inches. Overall height is 26 inches. Connection can be made either solid or through a valve to a water line for working pressure to 300 lb. in standard construction. Fittings can be supplied for pressure to 800 pounds.

Construction is in bar steel for the frame to mount on either a vertical or horizontal surface. The reel rims are tubular steel. The spokes are round steel bolt stock. There are no sharp surfaces to cut the hose.

If you write maker identify as IEN - 12940

TRUCK . . Power lift fork design elevates 2 ton pallets to 120 inches

Source: YALE & TOWNE MFG. CO.
11002 Roosevelt Blvd., Philadelphia 15, Pa.

Type M40-HLTP

The operator walks and controls this new 2-ton Worksaver motorized truck at the steering handle. It is designed to transport and stack skid bins or single faced pallets. It is provided with side caster wheels for stability and constant floor contact, in addition to its motorized travel drive wheel.

The truck measures about 87 in. in overall length with 42-in. forks. It can be turned in 67-in. intersecting aisles with a pallet load measuring 42 in. in width and length. Housing width is 42 inches. Mast height in lowered position is 83 inches.

Identify as IEN - 12941

You can tell how soon a process mixture is going to gel by using a new General Electric instrument in which you place a sample. A motor driven stirring rod slowly rotates in the mixture. As soon as it starts to thicken a spring closes electric contacts, stops a timer that has been counting off the seconds, also stops the driving motor for the stirring rod and signals the operator. Progress of a process can be watched by determining gel times at intervals. Paint components, varnishes, resins, plastics are good subjects.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

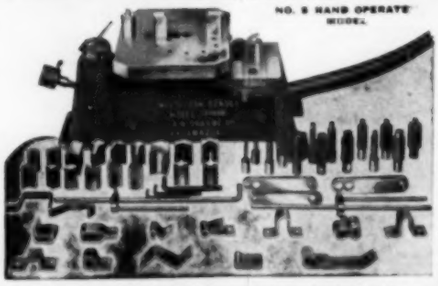
If you write maker identify as IEN - 12942

THE FAMOUS MULTIFORM BENDER CUTTER

Produces Without Special Tooling • Saves Die Costs
Saves on Expensive Presses

The illustration at the left shows just a few pieces produced on our famous Multiform Bender-Cutter. This efficient machine is useful in all lines of trade, Spring Plants, Radio, and Electrical Equipment Manufacturers, complete with tooling for bending material up to ⅛" x 1½".

NO. 5 HAND OPERATE MODEL



FIVE-IN-ONE-TOOL — ALSO LARGER MODELS
Air Operated Models in this and Larger Sizes Available
IT BENDS FLAT AND ROUND STOCK INTO ANY SHAPES, CUTS AND PUNCHES FLAT STOCK

J. A. RICHARDS CO. 907 NORTH PITCHER ST. KALAMAZOO 60F, MICH.

If you write maker identify as IEN - 12943

CANNON PLUGS for storage batteries

Cannon Battery Connectors are used for starting aircraft engines, stationary power units, pumping engines, welding equipment, and numerous applications where circuits carrying high amperage and relatively low voltage require easy or frequent disconnect for efficiency.

The plugs are made with many variations in material, shell and contact design, with and without mechanical assists for making and breaking contact. Some have auxiliary contacts for signaling purposes or solenoid contact of the high amperage circuits to prevent arcing. All 25-odd types are of highest quality.

New Battery Connector Bulletin GB-4 available on request

CANNON ELECTRIC
Since 1915
CANNON ELECTRIC COMPANY
LOS ANGELES 13, CALIFORNIA

Factories in Los Angeles, Toronto, New Haven, Great Lakes Division, Benton Harbor, Mich. Representatives in principal cities. Address Inquiries to Cannon Electric Co., Dept. D-112, P. O. Box 75, Lincoln Heights Station, Los Angeles 31, Calif.

If you write maker identify as IEN - 12944

"Custom Built"
STEEL TOTE BOXES
to your job specifications

in a hurry!

Send us your blueprints or requirements—we'll make speedy delivery on job-engineered steel tote boxes—any size, type or gauge—infra-red dried and painted to your order!

Boxes are made from one piece and folded at ends as shown and spot welded throughout. Write or wire now.

FOR FAST ACTION PHONE GRANT 1-9292

S·P STEWART-PARKER CO.
FRICK BUILDING · PITTSBURGH 19, PA.

If you write maker identify as IEN - 12945

DYNAMOMETER INSURES RUGGEDNESS OF ATLAS ROLLER CHAIN

In the Atlas laboratories, Dynamometer tests give final proof of the strength, life and economy of Atlas "Super-Life" Roller Chain. Here the results of all Atlas specifications and methods of manufacture are checked for top performance, under varying conditions of speed, load, and sprocket characteristics.

The Atlas Dynamometer provides a complete test of Atlas wearability, fatigue life, load-carrying capacity, and ability to withstand shock. As a result, you can be certain that every link of Atlas Chain will deliver more years of trouble-free service, more production for your power transmission dollar.

For greater efficiency, more economy, on every power drive, install Atlas "Super-Life" Roller Chain. Write today for the new Atlas Catalog and Handbook.

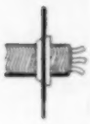
ATLAS CHAIN & MANUFACTURING CO.
PHILADELPHIA 24, PENNA.

ATLAS ROLLER CHAIN

If you write maker identify as IEN - 12946

C-D-F MAKES IT...

The Grommet that Springs out and HOLDS TIGHT!



• The aircraft industry needs thousands of grommets for wires and cables passed through bulkheads. C-D-F offers this unique answer:

Fine weave canvas C-D-F Dilecto rolled tubing is cut into rings. Each ring is grooved and beveled on its outer diameter, then slit diagonally.

Result: Plastic grommets that are easily compressed and inserted by hand. The built-in tension of the tough Dilecto ring makes it spring outward, tight against the edge of the hole . . . cushioning . . . insulating . . . saving assembly time!

DILECTO is mechanically and dielectrically strong. Resistant to high heat, hot oil, excessive humidity. C-D-F sells it in sheets, tubes, rods in a wide range of grades . . . also handles complete fabrication on high speed machines. Write now for sample grommet and Dilecto catalog!

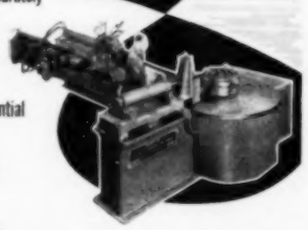
Continental-Diamond Fibre Company

NEWARK 21, DELAWARE

If you write maker identify as IEN - 12947

LEADING AIRCRAFT MANUFACTURERS ARE BUYING BATH RADIAL DRAW CONTOUR FORMERS

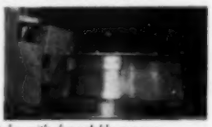
For forming accurately full circular jet and fuselage members and effecting substantial savings thru close tolerances



BATH FOR JET RINGS and FUSELAGE MEMBERS

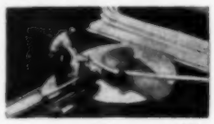
And no wonder! Using brake-formed strip stock or roll-formed sections and only one die, the Bath Radial Draw forms up true rings . . . cross section constant and true to template . . . no blanking, no waste of expensive material . . . savings—terrific! Vitally important in most major jet engine and aircraft programs.

BATH FOR STRETCH FORMING SHEETS and EXTRUSIONS



Specifying Bath Radial Draw Contour Formers for stretch forming work is best insurance for accuracy of product. Shoots formed into smooth tapered shapes inexpensively on one die . . . extrusions formed in varying planes and full circles with dependable accuracy.

BATH FOR COMPRESSION FORMING TUBES, EXTRUSIONS, ROLL-FORMED and BRAKE-FORMED SECTIONS



Large tubes and other sections not suited to stretch forming can readily be compression formed in unlimited variety of contours for aircraft.

FOR FURTHER INFORMATION ON BATH RADIAL DRAW CONTOUR FORMERS WRITE FOR THIS 32 PAGE CATALOG CF-352

THE CYRIL BATH COMPANY

MANUFACTURERS OF METAL FORMING MACHINERY

6935 MACHINERY AVENUE • CLEVELAND 3, OHIO

If you write maker identify as IEN - 12949

EXTRACTING . . Metal disintegrator to remove broken taps, studs, reamers

Source: ELECTRO ARC MFG. CO.
P. O. Box 448-A, Ann Arbor, Mich.

Works on many metals

Large work pieces can be placed upon and secured to the T-slotted work plate on this new Model 1-S machine. The radially supported disintegrating head is then brought into position above a broken stud or tool to cut a hole through its center that will permit its release and removal. The vertical column carrying the radial head permits 20 in. of travel movement. A ⅝-in. broken tap, extending 2½ in. down into a work piece, can be removed in 5 minutes.

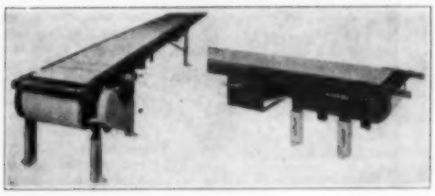
Connections are made to a 110-volt ac. power source, to a water line, and an electrode is positioned in the head. Current is supplied to the electrode from the power unit enclosed in the machine housing to cause sparking as the head reciprocates through a minute distance to make and break the circuit. This sparking disintegrates the metal ahead of the electrode without heating the surrounding metal.

Water is directed to the work through the hollow electrode to wash the spark particles away. Current and water adjustments can be made so the unit requires no attention after it has been set up until it has penetrated to a required depth.

If you write maker identify as IEN - 12950

CONVEYING . . Horizontal belt unit, motor drive, slide or roller bed

Source: ARROW PRODUCTS INC.
419 Front Ave. N. W., Grand Rapids 4, Mich.



Ask for Section SM-500 of Arrow manual

Horizontal Arr-O-Veyor is a new assembly of drive section shown to the left in the illustration, tail section shown to the right, and intermediate sections to make up an overall length between 35 and 150 feet. The unit can be specified with a 10 to 30-in. belt and a driving motor between ¾ and 2 hp. depending the belt width and length.

As shown in the illustration two types of bed are available. One includes rollers, the other employs a steel plate over which the belt slides. The assembly is completed with adjustable support legs, roller equipped connections at the two ends and a roller type take-up that assembles under either the head or the tail section. Snubber rolls, adjacent to the main 12-in. pulleys, are adjustable to assure belt tracking. The pulleys are crowned. Rolls and pulleys have anti-friction bearings.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

If you write maker identify as IEN - 12951

Its all in the Heat Treatment

ORIGINATORS OF THE SUPER SAFE STEEL STAMPS

The "Tough" back to absorb hammer blows without crushing or distorting —The "SOFT" center to cushion the shock — The "HARD" tip to insure cleaner impressions and a longer lasting stamp make the RICK the better safer stamp. These stamps are made in ANY type to fit ANY holder.

We are also manufacturers of—
- Special branding and knurling wheels . .
- Engraved plastic molds . . .
- Name stamps . . .
- Designs and trade marks . . .
- Embossing dies . . .
- Various Marking Dies and Tools

WRITE TODAY for ADDITIONAL INFORMATION

PITTSBURGH STENCIL and TOOL COMPANY

REEDSDALE and SCOTLAND STREETS

PITTSBURGH 12, PA

If you write maker identify as IEN - 12952

CONTROL DUST Save floor space

Hammond of KALAMAZOO

NO-DUST GRINDER

SAVE OVER 50% FLOOR SPACE THE HAMMOND WAY

DUST-LADEN AIR IS A MENACE!
- Protect your employees' health.
- Protect nearby machine tools from dust and grit.
- Save floor space — requires only 6½ square feet.

For 10", 12", and 14" wheels. Write for Catalog.

Hammond Machinery Builders Inc.

1801 DOUGLAS AVENUE • KALAMAZOO 54, MICHIGAN

If you write maker identify as IEN - 12953

Get Color SELECTION with PROVED PROTECTION

The M.S.A. GLASS FIBER HAT

Available in seven stock colors, the M.S.A. Glass Fiber Hat assures protection against impact and penetration; resists moisture and temperature change; has high dielectric qualities. Easily replaceable Snap-in-Adjustable lining is suspended from hat's brim for extra support and protection. This hat is light weight, smart looking, perfectly balanced. Write for details today.

MSA SAFETY EQUIPMENT HEADQUARTERS

MINE SAFETY APPLIANCES CO.
Braddock, Thomas and Meade Sts.
Pittsburgh 8, Pa.
At Your Service:
68 Branch Offices in the United States

If you write maker identify as IEN - 12954

Chicago MOUNTED Wheels

...now even better with 79E BOND

Buy Chicago Mounted Wheels—bonded with 79E Bond—and you'll never use any other!

79E—a tough new bond exclusive with Chicago Wheel—is the sensation of the industry . . . it does a BETTER grinding, burring, and finishing job FASTER. A size and shape for every use. Deliveries are excellent—Order today.

CHICAGO WHEEL & *Mfg. Co.*

Dept. N • 1101 West Monroe Street, Chicago 7

If you write maker identify as IEN - 12955

WISSCO BELTS

assure trouble-free production schedules

Present-day demands for maximum production call for equipment that can be counted on to stand up and deliver dependable, uninterrupted service—particularly where punishing conditions are encountered.

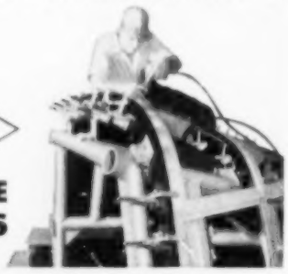
Wissco Metal Processing Belts are specialy engineered in various metals and alloys for long-lasting resistance to abrasion, corrosion and temperature extremes.

For additional information write or phone our nearest sales office.

THE COLORADO FUEL & IRON CORPORATION—Denver, Colorado
THE CALIFORNIA WIRE CLOTH CORPORATION—Oakland, California
WICKWIRE SPENCER STEEL DIVISION—Clinton, Massachusetts

WISSCO BELTS
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL & IRON CORPORATION
CFI

If you write maker identify as IEN - 12956



DE-STA-CO

TOGGLE CLAMPS

Speed KF's "Flying Boxcars"

De-Sta-Co Toggle Clamps maintain efficient production of Fairchild C-119 "Flying Boxcars" at Kaiser-Frazer. KF engineers welded a small contact bar to the clamps and taped them to protect the skin surfaces of the main canopy. Model No. 210-S Toggle Clamps used on this welded fixture also provide precise alignment of the glass retainer of the canopy structure during the riveting operation. Rapid toggle action and ease of work removal make De-Sta-Co Clamps the logical choice for this production application.

The same principles apply to your work holding problems in assembly, welding, bonding, machining or other production processes. Select from over 40 fixture or portable models. Positive holding pressures up to 4000 pounds.

Write today for your copy of the De-Sta-Co Catalog describing available stationary and portable toggle clamps.

DE-STA-CO DETROIT STAMPING COMPANY
342 Midland Ave. • Detroit 3, Mich.

If you write maker identify as IEN - 12957

JOHNSON wide-rehandling clamshell

EASY-CLOSING

big-diameter sheaves, with sealed-in needle bearings, reduce friction losses, deliver full power to cutting lips. Light weight, sturdy bucket assures big payload performance in loose materials.

ALL-WELDED

smooth, fast cleaning. Hard manganese cutting edge welded to lips toughens with use. 10 Wide Rehandling sizes: ½ - ½ - ¾ - 1 - 1¼ - 1½ - 1¾ - 2 - 2½ and 3 cu. yds.

Other Johnson types: General-Purpose and Heavy-Duty Digging

MAIL TODAY

to: C. S. JOHNSON Co. CHAMPAIGN, ILLINOIS (Koehring Subsidiary)
Send complete facts on ____-cu. yd. Wide Rehandling Clamshell Bucket.
NAME
COMPANY
STREET
CITY, STATE

If you write maker identify as IEN - 12958

COOLING . . Heat exchanger also heats and circulates liquid

Source: LABLINE INC.
215-19 N. Desplaines St., Chicago 6, Ill.

$235 or $295

A liquid that is to be circulated through laboratory equipment, to hold a predetermined temperature, is cooled to below room temperature or heated to a maximum of 212 deg. F. and circulated by a motor-driven bronze pump in this new constant temperature circulating equipment. The assembly includes controls sensitive to 0.25 deg. C. or to 0.02 deg. C. Delivery capacity of the pump is 3½ gpm. on free delivery or 1½ gpm. at 6-ft. head.

The stainless steel housing measures 15 by 14 by 17 inches. It encloses a heat exchange coil and the circulating pump. Inlet and outlet are provided on the side of the housing for hose connections to the coil and to the pump. The housing is insulated internally to prevent heat loss. The motor is ball bearing design, rates 1/30 hp. It is factory lubricated and sealed for life so no service attention is required.

If you write maker identify as IEN - 12959

RIVETING . . Multiple head machine feeds and sets three tubular rivets

Source: CHICAGO RIVET & MACHINE CO.
9602 W. Jackson Blvd., Bellwood, Ill.

Table measures 40 inches

The operator loads and unloads work in twelve fixtures as each comes into position on the geneva operated index table of this new special machine. The geneva is driven by a Graham variable speed transmission and motor so speed can be set at any rate to a maximum of 35 stations per minute. The rivets are fed and set by two head assemblies of the company's standard construction. One is a single feed unit. The other handles and sets two rivets at a time.

If you write maker identify as IEN - 12960

DRIVES . . For lumber mills are shown in operation by new 52-page picture book

Westinghouse Electric Corp.
511 Wood St., Dept. IEN, Room 1110, Pittsburgh 30, Pa.

Bulletin B-5299, "Electrical Equipment for Lumber Mills", is a picture summary on equipment offered by the company for log haul drives, saw drives, chipper drives, lighting, motor control, gearing, power supply. This equipment is summarized in a two-page application chart in the bulletin.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12961

ASBESTOS-PROTECTED!

ASBESTOS CANNOT CARBONIZE!

No motor is more durable than its windings. In U. S. Uniclosed Motors all windings are asbestos-protected. Motor life is tremendously increased because asbestos cannot carbonize and withstands highest temperatures.

UNICLOSED

Attractiveness of armored Uniclosed design adds eye appeal. ¼ to 250 h.p. Write for interesting descriptive Bulletin featuring Uniclosed Motors.

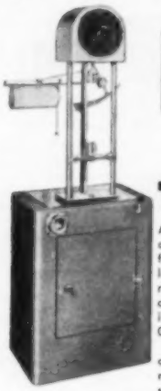
U.S. ELECTRICAL MOTORS Inc.
Los Angeles 54, Cal. Milford, Conn.

US MOTORS

If you write maker identify as IEN - 12962

small COMPACT TESTER

large ACCURATE RANGE



DILLON

multi-low-range universal

TESTER

A portable laboratory instrument that is accurate to ½ of 1%. Tests paper, thread, fabrics, plastics, springs, film, cord, wire, leather, resins, adhesives, glass, wood, ceramics, felt, cardboard, bakelite, insulation and any other materials which fall within its range. Has 5 scales: 0-10, 0-25, 0-50, 0-100 or 0-300 lbs.

Stress-strain curve automatically recorded on graph sheets. Limit switch prevents overrun. Indicates load as it is applied. Accessories permit transverse, tensile, compression and shear testing easily and economically. Speeds from 0" to 20" per minute. The ultimate in fine testing equipment yet low in cost.

Write or wire for illustrated bulletin—Today

W. C. DILLON & CO., INC.
14044 Raymer Street • Van Nys (Suburb of Los Angeles), California

If you write maker identify as IEN - 12963

ready to use FLINTZ

* (FLINT HARDNESS)

HARD RESURFACER FOR CONCRETE

FLINTZ Will bounce a steel ball!

- **Will hold a dead, smooth, even surface for life.**
- **Requires no cutting of underfloor.**
- **Only preparation is cleaning!**

We are currently placing 350 drums in one plant of a world-wide concern. We sell FLINTZ by the drum . . . or will contract the entire job.

"KEEP 'EM ROLLING"

Write today for FLINTZ booklet, "Keep 'Em Rolling" for full details, or address inquiries to:

DURA-TRED CO. FLINTZ DIV.
357 N. CENTRAL PARK BLVD • CHICAGO 24, ILLINOIS

If you write maker identify as IEN - 12964

Pick OLIVER POWER

4 sizes in 3 fuel types!

In all Oliver power classes you have a choice of distinct fuel types to fit your exact needs—carbureted units for gasoline and LP-gas, or an easy-starting diesel with the Lanova system and a simple, single-plunger pump.

Dimensions of all three fuel types in each power class are interchangeable. The three largest units, with maximum ratings of 73, 58, and 48.5 horsepower, are smooth, 6-cylinder overhead valve engines. Smallest is an overhead valve "four", developing up to 31 horsepower. All have controlled lubrication systems, bypass thermostats, shock-mounted instruments.

Open or housed units, or bare engines available, plus many extras for special applications. Write for full details. THE OLIVER CORPORATION, Dept. F14-11, 400 West Madison Street, Chicago 6, Illinois.

OLIVER

"FINEST IN FARM AND INDUSTRIAL MACHINERY"

If you write maker identify as IEN - 12965

Wherever temperature and humidity control is a factor

SPECIFY Remington Climate Controllers

Laboratories, testing rooms, food and pharmaceutical packing plants are just a few of the problem spots where temperature and humidity control problems are being solved every day by Remington Climate Controllers.

The Climate Controller combines cooling, heating (optional), dehumidifying, filtering, circulating and ventilating in one compact unit. It is recommended for temperatures from 50° to 95° F., relative humidities from 20% to 85%. Depending on conditions, a single unit can handle up to 6,000 cu. ft.—three units, up to 24,000 cu. ft.

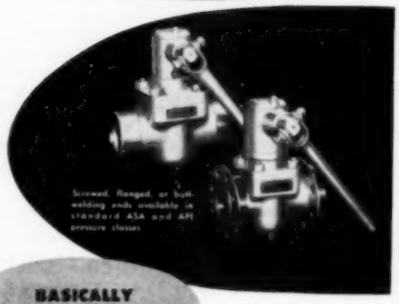
Automatic controls are available. Air cooled models require no plumbing—only outside air connections and electrical supply. There are water cooled models, too. Get the facts on the Remington Climate Controller today. Write for Bulletin 103.

Where excess humidity is the major problem Remington "Moisture Magnet" Dehumidifiers will remove up to 266* pints of water daily. *(Test conditions)

Remington AIR CONDITIONING
61-1 Willey Street
Auburn, New York

If you write maker identify as IEN - 12966

Cameron NON-LUBRICATED LIFT-PLUG VALVES



BASICALLY BETTER 7 WAYS

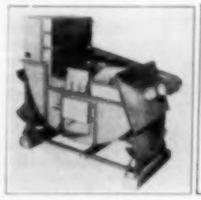
1. **NON-LUBRICATED** — no grease required to effect seal; prevents contamination of line product and clogging of meters; reduces chance for human error and need for maintenance.
2. **PRESSURE SEALING** — when plug is seated, line pressure automatically forces seat into tighter engagement with plug — body distortions do not affect seal.
3. **UNIQUE LIFT-PLUG ACTUATOR** — a novel design which lifts, turns and reseats plug in continuous turn of a lever.
4. **RENEWABLE SEAT AND PLUG** — easily replaced; permits any desired trim for specific services.
5. **REPAIRS ON THE JOB** — can be completely overhauled without removal from line; no special tools or skill required.
6. **EASY OPERATION** — requires less operating effort than other valve designs.
7. **FORGED STEEL** — all parts, including body for many sizes, are press or drop forged from specification materials.

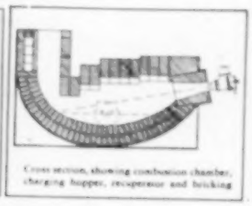
CAMERON IRON WORKS, INC.
P. O. BOX 1212 • HOUSTON, TEXAS
Export: 79 E. Empire State Bldg., New York, N. Y.

If you write maker identify as IEN - 12968

MELTING . . Tilting furnace, gas or oil fired, for specified metal

Source: ECLIPSE FUEL ENGINEERING CO.
111 Buchanan St., Rockford, Ill.




Cross section, showing combustion chamber, charging hopper, recuperator and bricking

Ask for Catalog C-90

Aluminum, brass, copper, gray iron, steel can be melted and poured continuously in this new design of the company reverberatory direct fired furnace. It is available for specified requirements in capacities from 300 to 4,400 pounds. A melt of 1,500 lb. of steel scrap can be tapped within 30 minutes. Fuel consumption for this operation ranges between 55 and 60 gph.

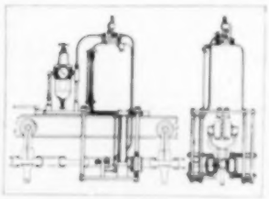
The furnace is charged through an elevated hopper at one end of the assembly. The hopper takes large or small risers, irregular runners, borings and spillings, ingots. It holds the entire charge while the furnace is under heat. Preheated metal reaches the melting zone and only molten metal reaches the main bath.

Pouring is from one side by operating a pneumatic tilt cylinder which connects to a shop air line supply. 80 to 100 pounds. Smallest assembly measures 100 by 96 by 78 inches. The largest one is 120 by 156 by 102 inches. Steel plate is shaped to the contour of the bath and is welded to the inside steel frame so bricking is no problem. The furnace employs standard 9-in. brick of types to suit given melting conditions. The arch is removable for patching and inspection.

If you write maker identify as IEN - 12969

LUBRICATING . . Pneumatic equipment for chain pins in trolley conveyor

Source: F. BJERRE CO.
118 Pierce Ave., Hamburg 1, N. Y.



About $300

A valve is operated in this new lubricator each time a chain pin passes a set position to release a single shot of compressed air that carries with it a fog of oil fed from a 7 qt. reservoir. The oil fog is directed through a nozzle to lubricate the chain pin bearings. Action is "on" followed by "off" so a pin will receive only the one shot if the conveyor movement should stop with the valve in operated position.

Equipment includes a Norgren air filter and pressure regulator, a control valve, nozzles and contactors, in addition to the reservoir. Overall dimensions are about 21 by 12 by 30 inches. The filter serves to remove any entrained moisture from the compressed air before it reaches the lubricant.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12970

use VANCO UP-BLAST POWER ROOF Ventilators

For Removing:
EXCESSIVE HEAT
NOXIOUS FUMES
CORROSIVE GASSES
"DEAD" AIR
OCCUPATIONAL DUSTS
RAPIDLY
EFFICIENTLY
POSITIVELY

A Weather-Tight Automatic Opening and Closing Power Ventilator

Delivers Perfect Air-Flow Without Resistance

Send For Free Descriptive Bulletin

OTHER PRODUCTS
• Syphon Gravity ROOF VENTILATORS
• Superflo Continuous ROOF VENTILATORS

E. VAN NOORDEN COMPANY
ventilation designers and contractors
since 1873
194 Magazine Street
BOSTON 19, MASS.

If you write maker identify as IEN - 12971

Spring manufacturer maintains peak production

● Since the installation of Cyclone Chain Drive Spiral Woven Belts to carry automobile and truck springs through tempering and hardening processes, this well-known manufacturer reports a definite production increase. More and better springs are produced in less time, constant speed through draw furnace assures uniform hardness and tempering, reducing rejects to a minimum.

Cyclone Conveyor Belts are available in three types — Spiral Woven, Flat Wire and Flex-Grid—in a variety of metals, alloys, finishes and mesh and wire sizes. For more information on how Cyclone Conveyor Belts can be adapted to your particular operations, write Dept. C-112 for a free copy of our Catalog 84.

U·S·S CYCLONE METAL CONVEYOR BELTS

CYCLONE FENCE DEPARTMENT
AMERICAN STEEL & WIRE DIVISION, UNITED STATES STEEL COMPANY
WAUKEGAN, ILLINOIS

USS

UNITED STATES STEEL

If you write maker identify as IEN - 12972

FOR PRECISION Carbide Finishing

ELGIN DIAMOND IN DYMO-C

...Designed for Carbides!

Where precision really counts, finishers specify ELGIN Diamond because they can be sure of:
- *consistent accuracy—uniform cutting action*
- *flawless finishes every time, in less time*

Actual field tests prove this new diamond abrasive up to 20% faster for finishing carbides.

Send for the DYMO-C bulletin today!

ABRASIVES DIVISION, Dept. H
ELGIN NATIONAL WATCH COMPANY
ELGIN, ILLINOIS

If you write maker identify as IEN - 12973

TRAFFIC NEVER STOPS when you repair your floors with PERMAMix

FOR PATCHING IN TEMPERATURES FROM 10° TO 100° ABOVE ZERO

3 EASY STEPS TO FOLLOW:
- **Clean area to be patched. Apply primer supplied in drum. Prime about 2" outside of patch.**
- **Fill area with PERMAMIX, just as it comes from the package, allowing sufficient material for slight crown.**
- **Tamp solidly in place and resume traffic immediately.**

No mixing, waiting or production delays when you repair your floors the easy, fast PERMAMIX way. Comes in handy, durable 50 lb. net weight drums.

ALSO AVAILABLE! The new PERMAMIX-C for patching in low temperatures from 5° above zero to -30° below...using the same 3 easy steps.

PERMAMIX CORPORATION
230 N. LaSalle St. • Chicago 1, Illinois

If you write maker identify as IEN - 12974

ARMSTRONG *Carbide* TOOL HOLDERS

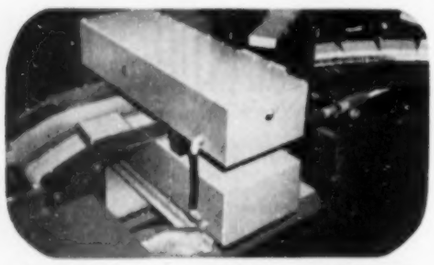
FOR HIGHER SPEEDS, AND HEAVIER FEEDS

ARMSTRONG Carbide Tool Holders and ARMIDE (Carbide) Tipped Cutters come in cased sets for tool rooms and maintenance departments, and individually in all sizes for general machine shop and production turning. They permit not only the ready machining of sand-filled castings, the hardest and toughest steels as well as many heretofore "unmachinable" materials, but also make practical much heavier cuts and cutting speeds up to 600 f.p.m. on ordinary work. They also run from 10 to 100 times as long between regrindings.

WRITE FOR CATALOG

ARMSTRONG BROS. TOOL CO.
"The Tool Holder People"
5248 W. ARSTRONG AVENUE, CHICAGO 30, U. S. A.
NEW YORK • SAN FRANCISCO

If you write maker identify as IEN - 12975



NOW GIVE YOUR PRODUCT

This 4-Way Protection from Stray Metal

1. **100% inspection**—RCA Metal Detector finds stray metal that is difficult or impossible to find by other methods. Can be set up to inspect every piece, every batch, every cubic inch of your product at speeds up to 1000 feet per minute.

2. **Detection of all metals**—RCA Metal Detector finds stray metal of *all kinds*—magnetic or non-magnetic. It ferrets out metal no matter how deeply imbedded—detects tramp metal as small as 0.039 in diameter.

3. **Inspection at any stage of manufacture**—RCA Metal Detector inspects raw materials, semi-finished products, or finished products—packaged and ready for shipment. Rejects contaminated items automatically or signals for manual rejection.

4. **Simple installation, low-cost maintenance**—RCA Metal Detector, in most cases, goes in without conveyor-line shutdown. Complete maintenance is available through nation-wide RCA Service Company.

RCA Metal Detector helps protect PLASTICS, DRUGS, RUBBER GOODS, FOOD, TOBACCO, CHEMICAL PRODUCTS, and ORE and LIMESTONE MACHINERY for:

Bakelite Company	The American Tobacco Co.
National Automotive Fibres, Inc.	General Mills, Inc.
Vick Chemical Co.	The Sherwin-Williams Co.
Parke, Davis & Co.	Monsanto Chemical Co.
Goodyear Synthetic Rubber Co.	Aluminum Company of America
The Firestone Tire & Rubber Co.	and many others.

RADIO CORPORATION of AMERICA
INDUSTRIAL EQUIPMENT CAMDEN, N. J.

Don't put off this important protection!
MAIL COUPON NOW

Please send me information on the RCA Metal Detector.

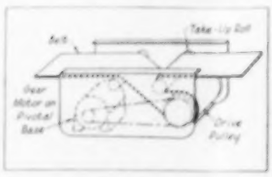
Name_____
Title_____
Company_____
Address_____
City_____ Zone____ State____

Have an engineer call on me.

If you write maker identify as IEN - 12977

CONVEYING . . Motor drive for belt and live roller conveyors

Source: LOGAN CO.
276 Cabel St., Louisville 6, Ky.



Applies on load side

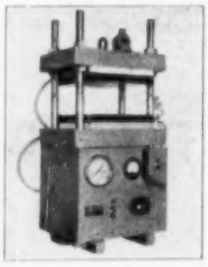
Adapto-Drive trade names a new assembly of chain connected motor, drive pulley and adjustable take up roll in a structural frame that can be positioned at any location under a belt or live roller conveyor. The take up roll makes it unnecessary to have any other provision for take up in the conveyor. The unit can be positioned where a change in direction is required as well as in a straight run.

The drive is available for conveyors measuring 14, 18, 24 and 30 in. in width. Any one of three speeds can be specified at 30, 60 or 80 fpm. Ratings range from ½ to 2 hp. Overall length is 3½ feet. Depth ranges from 16 to 18 inches. Adapto-End units also are available for conveyor construction in connection with the drive.

If you write maker identify as IEN - 12978

PRESS . . Hand hydraulic design for laboratory use, has 30 ton rating

Source: WABASH METAL PRODUCTS CO.
P. O. Box 305-A, Wabash, Ind.



Controlled temperature

Model 12-12 designates a new press in the company's line of hand hydraulic laboratory equipment similar to the unit shown in the illustration. The platens measure 12 by 12 inches. Stroke is 16 inches. Maximum daylight opening is 10 inches.

Equipment includes a pressure gage and a dial type millivoltmeter to indicate temperature in the electrically heated platens to a maximum of 600 deg. F. A pilot light and toggle switch control the heating circuit to the platens. A second toggle switch selects either the upper platen or the lower one for temperature reading on the meter. The press stands 36 in. in overall height. It provides 14-in. clearance between the columns from right to left.

If you write maker identify as IEN - 12979

DRYING . . Technical article reprint describes drying and finishing ovens by type and use

Young Brothers Co.
1929-33 Columbus Road, Cleveland 13, Ohio

James D. Russell, company's Sales Manager, is author of an article in the technical literature now offered as a 24-page reprint. Title is "Drying and Finishing Ovens". Topics include batch and conveyor-type ovens, modifications available in each, illustrated examples, applications.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN - 12980

NEW THREAD COMPOUND Licks Stud Freezing Even at 1800° F.!

SAFE for all high temperature applications!
SAFE for Stainless and Alloy Steels, too, will not pit or corrode!
IDEAL as a cutting compound to prevent galling of Stainless Steel!

FREE TEST SAMPLE! Send for YOURS *TODAY*

Make a convincing test of Fel-Pro C-5 "Hi-Temp" Thread Compound at our expense. Then you can be sure that C-5 will do everything we say it will do. See how it cuts heater dismantling time—how it cuts costly stud breakage and eliminates pitting. Then you will standardize on C-5 just as have some of the nation's largest refineries, utilities and process industries. Write for FREE Sample and data sheet TODAY!

FEL-PRO C-5 "HI-TEMP" THREAD COMPOUND

FELT PRODUCTS MFG. CO.
1523 CARROLL AVENUE • CHICAGO 7, ILLINOIS

If you write maker identify as IEN - 12981

If You Have A FACTORY PROBLEM In Production, Assembly, Packaging, Shipping

You Can Save Time and Money By Using SEAMLESS F.O.S. INDUSTRIAL TAPE

CALL OR WIRE
collect for complete information, prices, catalogues, free samples. Tape to meet government specifications. Wire details collect for 24-hour reply.

"Originators of Pressure-Sensitive Industrial Tape"

WIRE INDUSTRIAL TAPE DIV. H

THE SEAMLESS RUBBER COMPANY
NEW HAVEN 3, CONN., U. S. A.

If you write maker identify as IEN - 12982

NOW YOU CAN **Paint Fresh PLASTER**
NEW-LAID CONCRETE; STOP MILDEW, MOISTURE!

WHEN YOU PAINT WITH RUBBER!

You put a tough "rubber coat" on walls, floors, machinery, with Tropical's new rubber-base industrial paints. They defy moisture, chemicals, detergents, scrubbing! Prime and finish-paint fresh plaster the same day. Stop mold or mildew damage on inside walls. Uncured concrete, cement or cinder block or concrete laid directly on cinder fill is painted overnight for use next day. Paint a vapor barrier on inside walls to stop moisture travel to outside. Paint a tight, moisture- and chemical-resistant rubber shield on mechanical equipment!

FREE! Your letterhead request brings complete information on these new Tropical industrial rubber-base paints that out-perform ordinary paints every way—write today!

THE TROPICAL PAINT & OIL CO. SINCE 1883
1126-1264 W. 70th Street • Cleveland 2, Ohio

If you write maker identify as IEN - 12983

The Hobbs TRI-POWER Die Press

Use this die press for **Faster Die-Cutting** OF PAPER, SOFT PLASTICS, FABRICS, SYNTHETICS, ETC.

The versatile Tri-Power die press can help solve many of your die-cutting problems!

Designed primarily for cutting multiple layers of soft, flexible materials, it is exceptionally fast and easy to operate. Exclusive electronic controls provide complete safety for operator, machine and die. Capacity of press is 15 to 20 tons. Standard cutting speed is 16 strokes per minute. Other speeds can be supplied to meet special requirements. Rugged construction and simple electronic control center assure long life.

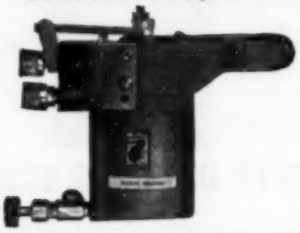
Investigate now the ways this machine can increase die-cutting production and efficiency in your plant!

WRITE FOR DESCRIPTIVE CIRCULAR! *For complete technical information, send for our fully descriptive Tri-Power circular.*

HOBBS MANUFACTURING CO.
40 SALISBURY ST., WORCESTER 3, MASS.
EST. 1860
Producers of Modern Machinery for Modern Industry
Jacquen Hand and Power Shears, Slitters and Rewinders, Hobbs Automatic and Tri-Power Die Presses, Paper Box Machinery and Touch-O-Matic Industrial Cutters.

If you write maker identify as IEN - 12984

DOUBLE YOUR DRILL PRESS OUTPUT FOR $33



USE A NEW MEAD PNEUMATIC DRILL PRESS FEED for DRILLING REAMING TAPPING

This simple, inexpensive device quickly converts standard drill presses into semi-automatic machines—increases production substantially on suitable jobs: double or more in some cases.

Clamps to spindle quill in a few seconds. Automatically closes air fixture on work. Adjustable feed control and break-through cushion. Quick-return. Easy to synchronize with automatic cycle equipment.

Air-Power does it quicker, cleaner, better. Write today for latest complete catalog.

MEAD SPECIALTIES COMPANY

4114 N. KNOX AVE., DEPT. E-112-A, CHICAGO 41, ILL.

If you write maker identify as IEN - 12985

THERE IS AN R-B-M CONTROL To Fit Your Needs

AC MAGNETIC STARTERS with Plasti-Clad Magnet Coil • *Write for Bulletin 605*

Full accessibility in a small package.

Contacts, coil and thermal element replacement with use of screwdriver only. Magnet coil—in molded phenolic case with riveted terminals—is completely embedded in a rock-hard resinous material, thus protecting against oil, dirt, moisture and normal mechanical damage.

HERMETICALLY SEALED RELAYS • *Write for Bulletin ASR*

50% smaller—lighter.

R-B-M 22204-0 meets AN 5304-1 specifications. R-B-M engineers have developed the 22300-0 currently used in government electronic, air-borne and ground equipment—as the electrical and mechanical equivalent of the AN 5304-1, yet 50% smaller in size with ½ the weight.

INDUSTRIAL CONTACTORS with Plasti-Clad Magnet Coil • *Write for Bulletin 600*

2-8 poles Non-Reversing. 2-5 poles Reversing. 25 Amp—600 AC Max.

Contacts can be replaced without removing wiring. To change coil, remove magnet frame and coil assembly only. 10 and 15 amp. poles can be changed from normally open to normally closed by using screwdriver only.

GENERAL PURPOSE RELAYS • *Write for Bulletin 570*

Low cost. Small size. Dependable performance. Available in many contact arrangements.

Whatever your needs for inexpensive, dependable relays for commercial applications—investigate R-B-M General Purpose Relays.

Other R-B-M products include; motor overload protectors, motor starting relays and low voltage DC electrical devices.

Consult R-B-M on Your Control Problems — Write Dept. L-11

R-B-M DIVISION ESSEX WIRE CORP.
Logansport, Indiana
MANUAL AND MAGNETIC ELECTRIC CONTROLS FOR AUTOMOTIVE, INDUSTRIAL, COMMUNICATION AND ELECTRONIC USE

If you write maker identify as IEN - 12987

TESTING . . Air sampler collects dust on filter paper disc

Source: STAPLEX COMPANY
68-75 Jay St., Brooklyn 1, N. Y.

Collects dust to test

The company announces general availability of its motor driven air sampler, originally developed for the Atomic Energy Commission, to make tests of air pollution. It consists of a handle equipped housing, a motor driven blower, an extension cord and plug for connection to a 110-volt power line and a removable assembly that includes a filter disc on which entrained foreign matter is collected by the blower action. The housing is made of aluminum. The sampler can be operated in 24 hour service.

If you write maker identify as IEN - 12988

HEAT TREATING . . Stopoff paste for use in selective work hardening

Source: DENFIS CHEMICAL LABORATORIES INC.
170-74 Pacific St., Brooklyn 2, N. Y.

Ready to use as supplied

Isopac CGX is a new stopoff paste sufficiently soft for application with a pressure gun on work that is to be selectively hardened. It can be used to fill the center hole of a stack of gears. It will prevent hardening of the protected area by slowing down the cooling of these areas during the quench. The material will not shrink or crack. It will prevent cracking of thin sections of a work piece while it is being quenched. It is knocked off after the heat treating process is finished.

If you write maker identify as IEN - 12989

SWITCH . . Toggle assembly of 1 to 10 double throw elements

Source: MICRO SWITCH
30 E. Spring St., Freeport, Ill.

Eight circuits $20.10

A single lever mounted on this new multiple element switch operates all the elements at one time to open and close individual circuits. The lever can be detented in the center and at either or both extreme positions. It can be made self-returning to the center. Each switch element is the company's standard assembly rated at 10 amp. on 250-volt ac. It is listed by Underwriters Laboratories, Inc. The representative 8-element assembly shown in the illustration measures about 2¼ by 2 by 3½ inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 12990

TRY THIS NEW FASTENER—FREE!

For fastening laps of corrugated asbestos or plastic roofing sheets, new work or maintenance — all without scaffolding —

HOLEGRIP

(Patent Applied for)

Eliminates all interior scaffolding.
Puts entire crew topside.
Increases fastening speed.
Completely seals holes, new or old.

Here is the fast, 3-step HOLEGRIP method:

1. Drill ½" hole through sheets at side lap.
2. Insert HOLEGRIP; toggle drops to horizontal position, engages nut.
3. Complete fastening by tightening with power nut-runner. Weath-R-seal seals the hole.

***THAT'S ALL!* Total time: 20 seconds!**

For complete information and sample fastener, with tool data, write:

FABRICATED PRODUCTS COMPANY
1952 Water Street West Newton, Pa.

If you write maker identify as IEN - 12991

Got to fill this order fast,
They need it in a hurry—
But, safe on non-skid Multigrip,
He can hurry without worry!

U·S·S multigrip FLOOR PLATE

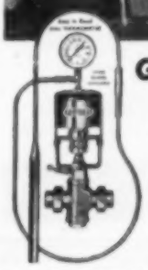
UNITED STATES STEEL COMPANY, PITTSBURGH
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO
TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA.
UNITED STATES STEEL SUPPLY DIVISION, CHICAGO
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

Sold by leading distributors from coast to coast

UNITED STATES STEEL

If you write maker identify as IEN - 12992

Below: Official U. S. Navy Photograph Michelson Laboratory Naval Ordnance Test Station Inyokern, Cal.



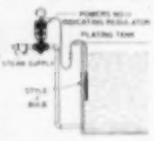
Get BETTER Control SAVE LABOR

Reduce Costs with—

POWERS

No. 11 TEMPERATURE REGULATORS

Most of the more than 30 steam heated tanks used in the Navy's modern shops shown above are automatically controlled by Powers regulators. They maintain a constant temperature, end losses caused by OVER-heating, help reduce rough plating, buffing time and decomposition of plating solutions.



Easy to Install—self-operating, have an easy to read 4" dial thermometer which shows temperature of plating solution under control. They are available with either lead sheathed or stainless steel bulbs. Bulletin 329 gives full information.

Compressed Air Operated Indicating Regulator

POWERS Series 100 Regulator

Accurately Controls heating and cooling of plating solutions

Powers has the most complete line of temperature regulators made for metal finishing operations. Contact our nearest office for further information, or

Write for Circular PLN

THE POWERS REGULATOR COMPANY
3400 Oakton Street, Skokie, Illinois (PLG)
Established 1891 • Offices Over 50 Cities • See Your Phone Book

If you write maker identify as IEN - 12994

Schrader check valves

assure Positive Air Control

Check valves can deliver the correct cycle in a pneumatic control or any of a hundred different uses.

Air can flow in one direction only through a Schrader Check Valve. Positive sealing action and long service are assured by the large seating area between the metal check and an oil resistant washer. All metal parts are brass, or are heavily plated.

Details on Schrader Check Valves and all Schrader Air Control Products are in the Schrader catalog. Send for your copy today.

A. SCHRADER'S SON
Division of Scovill Manufacturing Company, Incorporated
458 Vanderbilt Avenue, Dept. D-47, Brooklyn 17, New York

If you write maker identify as IEN - 12995

STOP Hand Hacksawing LABOR

Use HAND-I-HACK**
PORTABLE POWER HACKSAW

Muscle is the most expensive power known and it produces the least satisfactory results. Especially in hacksawing! Stop this time waste and drudgery—Use HAND-I-HACK. It will do most hacksawing jobs usually done by hand—because it works in any position, can be carried anywhere to the job, quickly pays for itself in labor saving and improved work. Capacity 3" x 3". Write for catalog and name of dealer.

*One man's energy output approx. 40W
**Trade Mark Reg. U.S. Pat. Off.

Lipe-ROLLWAY CORPORATION
Manufacturers of Automatic Clutches and Machine Tools
812 Emerson Ave., Syracuse 1, N. Y.

If you write maker identify as IEN - 12996

INSTALL IT! FORGET IT!

THAT'S all you have to do with this Taylor Self-Acting Temperature Controller! Simple, dependable, nearly practically no maintenance. Ideal where your process involves no extreme load changes. Where compressed air or electricity isn't available.

For jobs like: wax coating machines, plating and rinsing tanks, bottle and can washers, mixing and cooling kettles, hot water tanks, diesel water jackets, feed water systems, crude oil treaters, condenser cooler water in stills, oil field superheaters and others.

No auxiliary air supply required. Double seated valves available up to 2", single seated composition disc types up to 1". Numerous standard temperature ranges within 10° to 340°F., and semi-standard temperature ranges within 165° and 610°F. Choice of bulb materials and type of connection.

Ask your Taylor Field Engineer or write for **Catalog 36-R**. Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada.

Instruments for indicating, recording and controlling temperature, pressure, flow, liquid level, speed, density, load and humidity.

TAYLOR INSTRUMENTS MEAN ACCURACY FIRST

If you write maker identify as IEN - 12997

SAWING . . Power hack saw takes work to 9 in., variable feed

Source: SALES SERVICE MACHINE TOOL CO.
2361-65 University Ave., St. Paul 4, Minn.

Cuts any metal

Number 5 is a new assembly in the company's Hy-Duty line of Keller hack saw machines. It takes work to 9 in. in diameter or to 8 by 9 in. rectangular in its quick acting swivel vise. A foot lever can be depressed to hold the blade frame up to assist in loading bar stock.

Feed is set with pressure variable to a maximum of 200 lb. by turning a handwheel. The frame rides brass ways on the steel guide bar. Adjustment can be made for wear. Bearings are fitted with Oilite bushings. The company's Keller coolant pump is standard equipment. Included also is a stop switch, hinged motor bracket and a 1-hp. motor.

If you write maker identify as IEN - 12998

DRILLING . . Multiple spindle head for circle of holes at 10-deg. angle

Source: THRIFTMASTER PRODUCTS CORP.
1008 N. Plum St., Lancaster, Pa.

An ordnance job

Twelve spindles in this new special Thriftmaster head are located around a circle on a 10-deg. angle with the vertical center line. Each is linked to the upper feed head and assembled to guide in the lower head which remains stationary in relation to the work. Drive is by a central spindle and gear connection to the head spindles. The upper head moves down when the drilling machine feed is engaged to move the head spindles through their angular feed stroke. The drilled holes are ¼ inch. Feed is 0.004 ipr. and speed is 1,000 rpm.

If you write maker identify as IEN - 12999

TRUCKS . . Recent developments in trucks and their use are reviewed in house paper

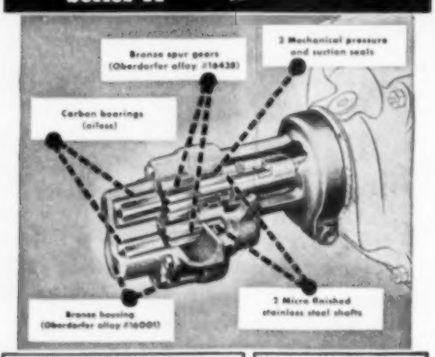
Lewis-Shepard Products Inc.
190 Walnut St., Dept. R-1, Watertown 72, Mass.

New designs of the company's power lift trucks and tractors are reviewed in its house publication, "The Lever", along with improvements on previous models, suggested equipment for a variety of handling jobs including hand lift trucks. Your name will be added to the mailing list upon request.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13000

INTERNATIONAL Series II BRONZE PUMPS



DIMENSIONS & PRICES – Pump only

Pump No.	Ht.	Width	Lgth.	Price
1½ CCC	2⅞"	2 11/16"	4¾"	$20.00
2 CCC	2 11/16"	2¾"	4¾"	22.50

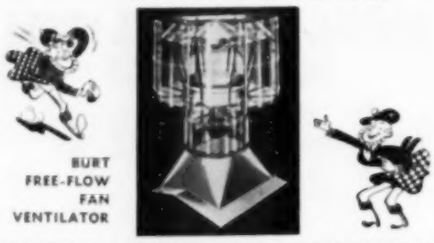
Complete units with ½ hp. 110 volt AC thermal overload motors (motor standard, but specially machined for pump mounting) . . . prices on request.
See our catalog in Sweet's File for PRODUCT DESIGNERS

CAPACITIES – Gal. per min. 1725 rpm – lbs. sq. in.

Press.	1½ CCC	2 CCC
0 lbs.	2.00 gal.	4.00 gal.
25 lbs.	1.95 gal.	3.67 gal.
50 lbs.	1.67 gal.	3.17 gal.
75 lbs.	1.35 gal.	2.83 gal.
100 lbs.	1.10 gal.	—

Oberdorfer Foundries, Inc., Ind. Pump Div.
1128 Thompson Rd. Syracuse, N. Y.

If you write maker identify as IEN - 13001



DOUBLE-DUTY FOR ECONOMY

GRAVITY operation serves efficiently when exhaust needs are not extreme.

POWER operation takes over to exhaust impurities approximately 6 times faster whenever needed.

The popular Burt Free-Flow Ventilator serves efficiently as a gravity unit when normal exhaust needs are not excessive. But, when production operations create high temperatures or greatly increase fumes, dust, etc. its Axial Flow Airfoil Fan accelerates the exhaust rate approximately six times faster. Positive ventilation is assured always—the degree of ventilation is controllable. Sizes start at 12" with rated capacity of 1040 C.F.M. to 84" giants weighing nearly 2 tons with 99050 C.F.M. capacity. See Sweets for further details or write Burt for Bulletin SPV-10A.

FAN & GRAVITY VENTILATORS - LOUVERS - SHEET METAL SPECIALTIES

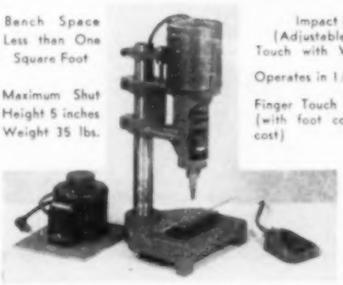
The Burt Manufacturing Company
909 So. High Street, Akron 11, Ohio

If you write maker identify as IEN - 13002

CUT PRODUCTION COSTS MIGHTY MIDGET PUNCH PRESSES

Bench Space Less than One Square Foot

Maximum Shut Height 5 inches
Weight 35 lbs.



Impact One Ton (Adjustable to Feather Touch with Variac control)

Operates in 1/6 Second

Finger Touch Control switch (with foot control at extra cost)

BETTER FASTER CLEANER WORK

Just plug in 110 V.

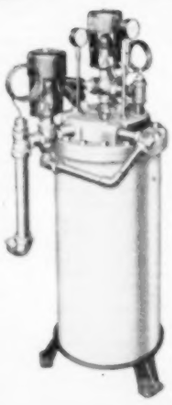
This compact little impact press can solve your production problem. Designed for cutting, crimping, riveting, marking, stamping, perforating and for subassembly work, it is the solution in many cases because of its size, low first cost and low upkeep. Investigate today!

PEACOCK METAL PRODUCTS, Inc.
754 Hyde Park Ave. Hyde Park 36, Mass.

Dealer inquiries invited. There are still a few open territories.

If you write maker identify as IEN - 13003

CONDITIONS DEMANDED – So-COE developed . . .



The WATER HEATER OF TOMORROW

Here is a radically different "package" water heater. • It arrives completely assembled, tested and adjusted. No accessories to buy. Simply attach pipes, then turn on water and steam. • An advanced product of high quality in every detail. • Utilize abundant water at the safe temperature of 120° F. for washroom, or water at 160° to 180° F. direct from tank simultaneously for scalding purposes. • Seventeen sizes in capacities from 200 to 3000 G. P. M.

Heavily glass-lined A. S. M. E. tanks.

MAXIMUM Thermal Efficiency.

All parts quickly and easily accessible.

Completely Insulated and Protected by Waterproof Cover.

Long life through minimum corrosion.

17 Sizes.

Capacities 200 to 3000 G. P. M.

THE COE MANUFACTURING COMPANY
504 BANK STREET • PAINESVILLE, OHIO

If you write maker identify as IEN - 13004

in just 3 seconds

. . . you can read any surface temperature in your plant . . . accurately and easily . . . with the Alnor Portable Pyrocon.

Compact in size, complete in precision design and workmanship, this rugged instrument assures the highest standards of speed, accuracy and dependability. You can take temperature readings on materials in process, the finished product or the heated equipment itself—in as few as 3 seconds!

Alnor Portable Pyrocons come in scale ranges to 2000° F., with thermocouples for every application. You'll find full details on the Pyrocon exactly suited to your operations in Bulletin 4257. Send for your copy now. Write: Illinois Testing Laboratories, Inc., Room 517, 420 N. LaSalle St., Chicago 10, Ill.

Alnor — PRECISION INSTRUMENTS FOR EVERY INDUSTRY

If you write maker identify as IEN - 13005

SPEEDS UP WORK! CUTS DOWN COSTS!

The amazing desk-top **OZAMATIC** makes direct copies of almost anything typed, printed, written or drawn!

No Retyping! No Proof-reading! No Costly Errors!

WITH the amazing new compact OZAMATIC, you simply feed in your original copy of any letter, drawing, or report on ordinary translucent material. In a matter of seconds you have your first copy—*clean, dry* and *ready to use!* Letter-size copies at a rate up to 1,000 an hour . . . at a cost of less than 1½c each.

You'll find many uses for the Ozalid direct copying process entirely self-contained in the desk-top OZAMATIC machine. It makes copies up to 16 inches wide, at speeds up to 30 feet per minute. Larger Ozalid machines accept wider originals, and have even greater capacity. Any girl in your office can learn to operate any Ozalid machine in five minutes.

Write today for free, illustrated literature—or call the Ozalid distributor listed in the classified section of your local phone book.

Cut Copying Costs . . . Use

OZALID

Johnson City, N. Y.
A Division of General Aniline & Film Corporation.
"From Research to Reality."
Ozalid in Canada—Hughes Owens, Ltd., Montreal.

If you write maker identify as IEN - 13007

CORROSION PROOFING . . Plastic tape to protect pipe fittings underground

Source: DRESSER MFG. DIVISION
102 Fisher Ave., Bradford, Pa.

Applies on the job

Dressertape, the company's polyvinyl chloride tape, previously described IEN-5227-52 in a 2-in. width, is now available in 1-in. width for use on pipe fittings. High electrical resistance combines with excellent adhesion, mechanical strength and resistance to attack by sunlight, as well as excellent aging qualities, to protect underground pipe and fittings against attack by water, either fresh or salt, acids, alkalis, oil and soil chemicals. The tape will conform to irregular surfaces and can be applied cold. A line that has been wrapped can be back filled immediately.

If you write maker identify as IEN - 13008

DRILLING . . Carbide tipped drill for use in hard steel, ⅛ to ½ inch

Source: NELCO TOOL CO.
264-68 Center St., Manchester, Conn.

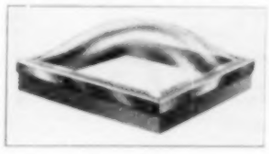
The tip is brazed in

The steel shank in this new drill is machined to a V-shape to take the carbide bit. The brazed connection provides support for the tip as well as solid backing to drive it. Drilling action produces a pulverized chip and does not anneal hard material through which the drill is fed. Standard sizes range from ¼ to ½ in. in diameter in 1/32 in. steps.

If you write maker identify as IEN - 13009

BUILDING . . Plastic dome skylight, made with a rectangular metal frame

Source: E. VAN NOORDEN CO.
97-101 Magazine St., Cambridge 39, Mass.



Unbreakable

Domelite trade names a new plastic skylight made of Plexiglas and an aluminum, copper or galvanized iron frame ready for application on a curve. The frame is equipped with screws and reinforced screw holes. Installation can be made by one man. Several sizes in the line range from 20 to 29 in. to 64 by 96 inches. The plastic can be either clear or translucent.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13010

Photo-Electric Controls you can DEPEND on!

for Counting; Control of Smoke, Registration, Liquid Level, Illumination, etc.

Engineered to do the job. Just tell us what you want to do.

SM2-B—One of many AUTOTRON models designed to meet efficiently all requirements of photo-electric operation from the simplest to the most critical. Built for DEPENDABILITY from rugged cast aluminum cases to the smallest detail.

Send for Bul. SM-32 or tell us what you want to do.

POSITIVE OPERATION. The AUTOTRON Photo-amplifier energizes the built-in plate relay positively even with a small change in light. Avoids critical adjustments. Makes Photo-electric Control more DEPENDABLE and more PRACTICAL than ever before.

SHARP LIGHT BEAM REGULATION. Makes precision control simple instead of "critical"

NEW SAFETY FEATURES. Two-filament lamps avoid light source failure. Safety relay stays open until amplifier warms up—opens automatically when a tube filament fails.

BUILT TO MEET EXACTING REQUIREMENTS. Used throughout industry—in breweries, steel, paper and flour mills, printing plants, pottery and canning factories, foundries, machine shops, etc.

AUTOTRON INDUSTRIAL CONTROLS

The AUTOTRON Co.
BOX 722 — DANVILLE, ILL.
Representatives in Principal Cities

If you write maker identify as IEN - 13011

Cuts everything!

- CARBON TOOL STEEL
- PLASTICS • WOOD
- ASBESTOS • PAPER

Delta 14" BAND SAW

IDEAL FOR PLANT MAINTENANCE

- **Five cutting speeds**—four for metal, one for wood
- **Easy change from wood to metal** simply flip a lever
- **Gear drive for metal cutting** engineered for long and trouble-free service
- **Metal speeds** 125, 175, 250, 340 F.P.M.
- **Double trunnion table mounting**—massive table, 14 x 14

Write for catalog, or see your Delta dealer listed in Classified Phone Directory under "Tools"

There's a Delta Power Tool for Your Job - Wood or Metal Working
53 MACHINES — 246 MODELS — MORE THAN 1300 ACCESSORIES

DELTA MILWAUKEE — DELTA POWER TOOL DIVISION
Rockwell MANUFACTURING COMPANY
624M N. Lexington Avenue, Pittsburgh 8, Pa.

If you write maker identify as IEN - 13012

IF IT HAS TO GO UPSTAIRS
PUT THE LIFTVEYOR TO WORK

The Liftveyor is a quick economical way to move boxes, crates, parts and subassemblies from one floor to the next. It was engineered by conveyor specialists with more than 30 years experience in materials handling. All parts are standardized and mass-produced for manufacturing economy—low cost.

All elements are tested, assembled and packaged for immediate shipment and for a minimum amount of field assembly.

The design of all components has stood the supreme test of long continuous service and the complete assembly incorporates all approved safety factors.

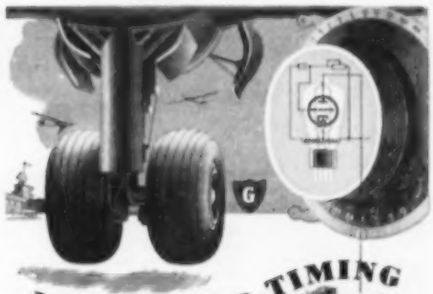
Belt speed and type of bed (roller or slider) are optional.

Conveyor may be controlled from any point.

Write for details and prices, stating your operating requirements.

Mechanical Handling *Systems Inc.* MHS
4605 NANCY AVE. • DETROIT 12, MICH.
Offices in Principal Cities
In Canada: Canadian Mechanical Handling Systems, Ltd.
4970

If you write maker identify as IEN - 13013



LANDING OR TIMING Relays BY GUARDIAN

For dependable operation of landing gears, leading airplane manufacturers specify Guardian sealed solenoid contactors. In many more control applications for military and civilian airplanes, Guardian units are familiar favorites. Outstanding industrial applications of Guardian Relays include electronic timing of camera shutters or controlling intervals in welding and plastic molding, or measuring speeds beyond the capacity of mechanical means using the fast-acting Series 165 D.C. Guardian Relay with a capacitor and an adjustable resistor connected to the grid of a "trigger" type tube. Cost-free advice on *your* application is yours for the asking. Write.

GUARDIAN ELECTRIC
1620-M W. WALNUT STREET — CHICAGO 12, ILLINOIS
A COMPLETE LINE OF RELAYS SERVING AMERICAN INDUSTRY

If you write maker identify as IEN - 13014

FIVE reasons why it's "SAFETY" FIRST!

Blue Devil SOCKET SCREW PRODUCTS

for all socket screw products

- ★ safer to use
- ★ easier to use
- ★ better wrenching
- ★ higher quality
- ★ complete selection

SOLD ONLY BY AUTHORIZED INDUSTRIAL DISTRIBUTORS

SAFETY SOCKET SCREW COMPANY
6508 Avondale Avenue, Chicago 31, Illinois

If you write maker identify as IEN - 13015

You'll find these products in SAFE HANDS!

HANDEEZ

a must where hands come in contact with lubricating oils — lifts shop grime from pores, gently but thoroughly. Contains a sterilized vegetable emollient which acts as an absorbent. Non-irritating — keeps skin free of cracks where dermatitis starts. In powder form—bulks BIG at low cost.

BORSUDS

A boosted soluble hand cleaner for heavy grime on tender skin. Contains finest medium and low titer soaps (the lower the titer the more quickly soluble the soap). Lathers richly even in fairly hard water, cannot clog drains.

VOLAX

Extra-heavy duty hand cleaner. Removes ground-in grime, printing ink, stubborn dirt. Contains friable volcanic ash.

DISPENSING EQUIPMENT AVAILABLE
See your DOLGE SERVICE MAN or write for literature

operandable DOLGE
WESTPORT, CONNECTICUT

If you write maker identify as IEN - 13016

For Immediate Shipment

14 sizes — 1/8" to 4" O.D. — in stock at all times for immediate shipment. Facilities and engineering skill immediately available for special specification jobs.

CURTIS UNIVERSAL JOINTS

Specialists in Universal Joints for over 30 years, Curtis offers more than just time saving availability. Made of the finest alloy steels, accurately machined — with either solid or bored hubs — they may be easily applied to most universal joint needs, ranging from instrument controls to heavy steel mill applications.

ONLY CURTIS OFFERS ALL THESE ADVANTAGES

Availability — 14 sizes always in stock.
Simplicity — fewer parts, simpler construction.
Government Tests — complete equipment for government tests in our plant.

Write today for free engineering data and price list

CURTIS UNIVERSAL JOINT CO., INC.
7 Birnie Ave. Springfield, Mass.
As near to you as your telephone

A MANUFACTURER OF UNIVERSAL JOINTS SINCE 1919

If you write maker identify as IEN - 13017

RHEOSTAT . . Wire wound design, stepless adjustment, 25 and 50 watts

Source: WARD LEONARD ELECTRIC CO.
29-33 South St., Mount Vernon, N. Y.

Ask for Bulletin 1110

Vitrohm enamel bonds the core and base in this new rheostat. It also secures the resistance wire in place and prevents it from shifting during rotation of the contact shoes. The shoes are mounted on a balanced spring steel arm to maintain uniform pressure. The arm is locked to a Mycalex insulating hub for operation free from backlash and for positive control.

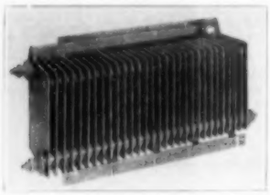
A shunt, copper leaf type, and solid metal graphite contact shoes are riveted to the contact arm. The shoes are self lubricating. A collector ring is made of a corrosion resistant alloy and is permanently riveted to the ceramic base. A stop engages the hub at the end of rotational travel. Three tinned alloy terminals permit rheostat or potentiometer connection. End terminals are spot welded for permanent anchorage.

Two sizes rate 25 and 50 watts based on a 300-deg. C. rise from 40-deg. C. ambient temperature. Resistance values range from 1 to 2,500 ohms in the 25-watt size and from 1 to 7,500 ohms in the larger 50-watt unit.

If you write maker identify as IEN - 13018

RECTIFYING . . Selenium assembly with individual cells rating 36 volts

Source: FEDERAL TELEPHONE & RADIO CORP.
102 Kingsland Road, Clifton, N. J.



For dc. power supply

The company announces development of a new 36-volt selenium rectifier cell which it is prepared to assemble in required number for a given voltage input. The new design saves about 20 per cent in weight and size compared with the company's previous 26-volt cell. Intended applications, at present, are principally in aircraft and military equipment. Characteristics are rugged construction, long life and ability to operate at high temperature in its rated service.

If you write maker identify as IEN - 13019

LEAD . . Industrial uses, manufacture and properties are covered by textbook

Lead Industries Association
420 Lexington Ave., New York 17, N. Y.

Batteries, electric cable, chemical construction, plumbing, architecture, shielding, bearings, paint, packaging, solder applications of lead are described in detail by new 230-page book, "Lead in Modern Industry". List price is $1.50. Other subjects include manufacture, forms and fabrication, properties of the metal and its alloys.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13020

Want to know what it costs

TO KEEP YOUR GRANULARS FROM *Sticking* IN BINS?

We're referring to the use of a Cleveland Air Vibrator as a low-cost, quick action way to free up bins, hoppers, chutes, screens, storage tanks, etc., containing granulars inclined to arch, bridge or stick.

An average installation on a standard steel bin of 10-tons capacity in the chemical processing industry is only $101.55!

An average installation of a Cleveland Air Vibrator on a standard steel bin of 1500# capacity in the food processing industry is only $41.40.

On a 3000# bin in the foundry industry, it costs only $52.05.

On a mine car handling ore, a Cleveland Air Vibrator costs only $153.05.

On a wet batch hopper of 2 cubic-yard capacity, it costs only $41.40 to keep concrete materials moving.

These are merely typical installations of Cleveland vibrators. We make a type and size to meet any requirement. Our vibrators are moving everything from walnuts to ice cubes, concrete to bottle caps.

Standard metallic impact and air-cushioned quiet types. What's Your Problem? Catalog No. 105 on request.

BIN Stuck Lately?

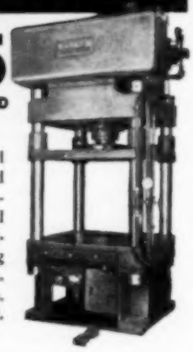
Move, Settle or Package Quickly with *Cleveland Air Vibrators*

THE CLEVELAND VIBRATOR CO.
2736 Clinton Avenue • Cleveland 13, Ohio

If you write maker identify as IEN - 13021

helpful HYDRAULIC PRESS *catalog*

75 STANDARD MODELS



Keep it in your machine tool file. Hannifin Standardized Hydraulic Presses Catalog contains complete descriptions and specifications on Hannifin Forcing Presses, Straightening Presses, Column-Type Presses. Hannifin Corporation, 1107 S. Kilbourn Ave., Chicago 24, Ill.

WRITE FOR BULLETIN 130

HANNIFIN

Air Cylinders • Hydraulic Cylinders • Hydraulic Presses
Pneumatic Presses • Hydraulic Riveters • Air Control Valves

If you write maker identify as IEN - 13022

for BONDACTORS, the machines that shoot tons of concrete per hour

WINSMITH SPEED REDUCERS

. . . heart of the drive mechanism

Shooting concrete, castable refractories, acoustical plastics and similar pre-mixed aggregates, in quantities up to 3 cubic yards per hour, is the tough kind of work that this Bondactor machine is cut out for.

. . . and that calls for sturdiness throughout, especially the drive mechanism which bears the real brunt of running under continually heavy loads. Heart of the Bondactor's drive is a Winsmith Vertical Type, Single Reduction, Worm Gear Speed Reducer, driven by an air motor at varying speeds depending on the desired rate of feed.

Says Air Placement Equipment Co., manufacturer of Bondactor: "We started using the Winsmith Reducer about 5 years ago, and because of continual satisfaction, it has been used exclusively on all Bondactor machines."

Like Bondactor, any equipment or machines requiring speed reduction stand to gain noteworthy advantages through the selection of Winsmith Speed Reducers. Fully standardized, thereby simplifying design, installation and replacement problems, the Winsmith line is the most complete within its range of 1/100 to 85 hp and 1.1:1 to 50,000:1 reduction ratios.

Request catalog 148 for details.

WINSMITH, Inc.
10 Davis St., Springville (Erie County), N. Y.

If you write maker identify as IEN - 13024

Norgren MICRO-FOG LUBRICATORS

RELY ON

ACE PRECISION NYLON BALLS FOR EXACT CONTROL

SIZES 1/8"–3/8"
TOLERANCES ±.001

C. A. Norgren Co., Denver, Colorado, uses Ace Nylon Balls as feed tube checks in Micro-Fog Lubricators to provide instant oil flow.

Ace Nylon Balls of Du Pont Nylon FM #10001 are mass produced to close tolerances giving you the advantages of toughness at low temperatures, form stability at high temperatures, light weight, chemical and abrasion resistance.

Hundreds of Industrial Applications! Let our engineers advise you.

Request samples and bulletin TODAY!

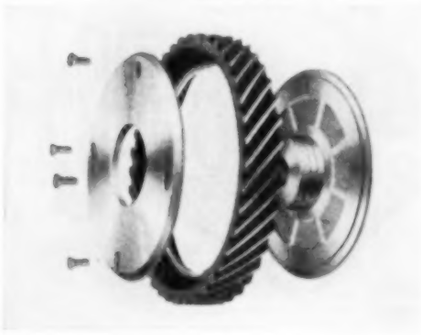
ACE PLASTIC COMPANY
Precision Plastic Fabricators

91-24 Van Wyck Blvd. • Jamaica 2, N. Y.

If you write maker identify as IEN - 13025

A PAID NEWS ADVERTISEMENT BY CARBORUNDUM CO.

BELT GRINDING . . . New Contact Wheel cuts belt grinding costs



When the new "T-61" Universal Hub Contact Wheel is used, contact wheel replacement costs are virtually cut in half, and abrasive belt life doubled, or better.

The "T-61" Hub Wheel is a simple three-part assembly which includes a flanged universal hub, a serrated rubber "tire," and a side plate. One hub will mount up to 144 different tires, from 1/4" to 6" in width, and from 5 to 105 durometer hardness. This feature permits using one basic hub for everything from rough grinding to the finest flat or contoured surface finishing.

Changing the tire and belt is a fast, simple operation done without removing the hub from the spindle.

Initial cost of the "T-61" Hub Wheel is lower, by as much as 19% for some sizes, than comparable old type contact wheels. Tires, when worn out are discarded and replaced with new ones for less than half the cost of a complete wheel. In fact, new tires cost no more than recovering old style wheels, and involve none of the delay and extra shipping charges.

Each part of the hub wheel assembly is individually balanced in manufacture, so no balancing is required when changing tires or parts.

The "T-61" tires used on this contact wheel assembly feature the cost-cutting "61" serrated rubber face developed by Carborundum. These serrations cause a controlled breakdown in the bond of the abrasive belt.

The improved cutting qualities which result from this controled action lengthen belt life and reduce glazing to a minimum.

Users of the "T-61" Universal Hub Contact Wheel report that it gives them far superior results, with more versatility, lower investment cost, and lower replacement cost, than are possible with any other contact wheel, conventional or serrated.

For more information on cutting costs with the "T-61" Hub Wheel available *only* from The Carborundum Company, write to Dept. IEN 82-79, The Carborundum Company, Niagara Falls, New York.

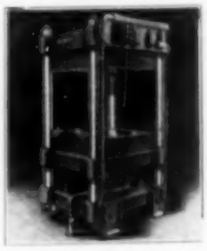
"Carborundum" is a registered trademark of The Carborundum Company, Niagara Falls, N. Y.

THE CARBORUNDUM COMPANY
Dept. IEN 82-79, Niagara Falls, New York

If you write maker identify as IEN - 13027

PLASTIC MOLDING . . Hydraulic press, rates 113 and 226 ton on 2,000 pounds

Source: ERIE ENGINE & MFG. CO.
Adams & E. 12th Sts., Erie, Pa.



Ask for technical data

The company announces availability of three series of double acting hydraulic presses, particularly to mold reinforced plastic. Series 200 and Series 250 rate 113-ton working pressure and 63-ton retracting pressure. The third Series 300 rates 226 and 126 ton. The first two employ single 12-in. cylinders with standard strokes at 37 and 50 inches. The third mounts two 12-in. cylinders with standard stroke at 37 inches. Daylight opening is 42 and 70 in. but can be specified at any amount. Working area is 32 by 36 in., 42 by 49 in., and 40 by 76 inches.

Power is supplied by separate Vickers hydraulic equipment for closing speed at 350 ipm. on the single cylinder units, 175 ipm. on the two cylinder machine. Slow closing speed is 7⅛ and 3¾ ipm. Slow opening speed is 17 and 8½ ipm. Rapid open-speed is 400 and 200 ipm. Control centers at push buttons to operate solenoid valves. The pump motor rates 15 hp., operates at 1,200 rpm. Equipment includes an Eagle timer.

If you write maker identify as IEN - 13028

PLASTIC . . Modified polystyrene is resistant to heat and shock loads

Source: KOPPERS CO.
2047 Koppers Bldg., Pittsburgh 19, Pa.

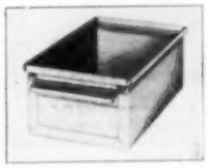
Available in opaque colors

Heat distortion at temperature is about 198 deg. for the company's new Type MC-409 polystyrene molding material. Elongation is 5 to 6 times that of the company's regular material. The new plastic has been developed for manufacture of products such as cutlery handles, washing machine components, toys that may be exposed to heat, refrigerator parts that require hand washing, storage battery cases subject to high engine temperature and to shock service.

If you write maker identify as IEN - 13029

HANDLING . . Steel tote box, straight side design, stacking lip

Source: PLATT & LABONIA SHEET METAL MFG. CO.
68-72 Broadway, North Haven, Conn.

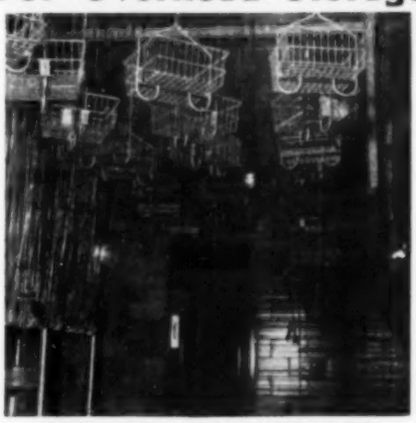


Eight sizes to 22 by 12 by 8 in. are included in a new line of straight side steel tote boxes made of 16, 18 or 20-gage sheet steel. Each size can be supplied in plain or baked green finish. Special sizes can be specified. Formed handles with a hole to take a pull-rod are integral.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13030

For Overhead Storage



THE MOORE LOCKERBASKET

A new type basket for overhead storage of clothing and effects. The Moore Lockerbasket provides a sanitary and secure means for storage in modern changerooms. Basket slides on hanger, lowers onto garment hooks, gives slip-proof clothing suspension. Galvanized electro-welded wire. Basket 14" square, provides over 1200 cu. in. storage.

Write for Catalog and free book, "The Design and Layout of Industrial Change Rooms."

THE MOORE COMPANY • DEPARTMENT 92
1036 QUARRIER STREET • CHARLESTON, WEST VIRGINIA

If you write maker identify as IEN - 13031

"WHAT? YOU MEAN I CAN GET SPECIAL METAL PATTERNS TAILORMADE FOR OUR PRODUCT?"

Yes.. with RIGID-tex METALS

PATTERN S-W1 SHOWN FULL SIZE

• The same skilled metal "imagineering" service team that has designed patterns for all kinds of products in every industry is now available to you. The Rigidized Metals Corporation, sole manufacturers of three-dimensional, design-strengthened, textured RIGID-TEX METALS, not only offers you a complete choice of ready-made patterns but will work with you to produce special patterns *tailormade to meet your individual requirements*. If you wish a metal that has light weight, high strength, damage resistance and *metal conservation features* - PLUS versatile fabrication, don't fail to get the complete story today.

WRITE TODAY on your company letterhead for new RIGID-TEX METALS Workability Folder and name of your local RIGID-TEX METALS Warehouse Distributors.

U.S. & Foreign Patents

Rigidized Metals Corporation

66411 OHIO STREET BUFFALO 3, N. Y.

Offices in Principal Cities in the U. S. and Canada

If you write maker identify as IEN - 13032

50,000 GALLONS OF WATER for Fire Protection

50,000 gallons of water for fire protection and lower insurance rates—that's what this modern Horton Watersphere provides. Backed by dependable gravity pressure, the water stored in this tank is ready to quench a fire—any hour of the day or night—the minute a sprinkler head is opened.

Waterspheres range in capacity from 25,000 to 250,000 gallons. Horton ellipsoidal-bottom elevated tanks are built in sizes from 15,000 to 500,000 gallons. Please state capacity desired, height to bottom, location and type of insurance carried when requesting quotations.

50,000-gallon Horton Watersphere at Hendrickson Motor Truck Co., Lyons Illinois

CHICAGO BRIDGE & IRON COMPANY
2123 McCormick Building • Chicago 4, Illinois
Atlanta • Birmingham • Boston • Cleveland • Detroit • Houston
Los Angeles • New York • Philadelphia • San Francisco
Seattle • Tulsa • Washington, D. C.
Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PA.

If you write maker identify as IEN - 13033

DON'T SCRAP IT!

LET "GLOVCO" RECONDITION IT (LEATHER OR FABRIC)

DUST COLLECTOR BAGS • CONVEYOR BELTING
TARPAULINS • DROP CLOTHS • FILTER PADS

At a mere fraction the cost of replacement, we clean and professionally repair these and many other items, restoring them to new usefulness. Our pick-up and delivery plan in most industrial areas eliminates mechanical difficulties making this reconditioning plan work smoothly and to your complete advantage.

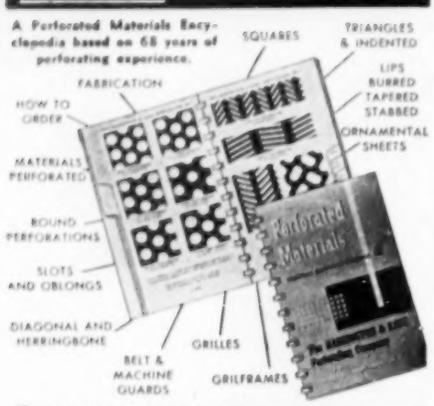
Our work glove reconditioning plan includes: pick-up, cleaning and sterilizing, repairing, reshaping, pairing, packaging and delivery. Users of the service record savings up to 49% in work glove costs. We will be glad to demonstrate this service at no cost to you. Representatives in all industrial areas

U. S. INDUSTRIAL GLOVE CORP.
9354 Rosslawn Ave., Detroit 4, Mich.

If you write maker identify as IEN - 13034

What is Perforated Material?
Where to use Perforated Material
Why H & K Perforated Material?

A Perforated Materials Encyclopedia based on 68 years of perforating experience.



Be sure you have H & K General Catalog 62 —Write for it

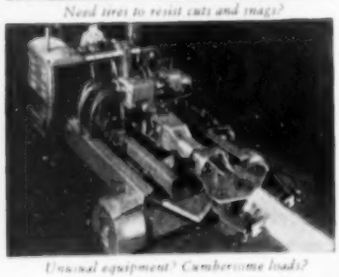
The Harrington & King Perforating Co.
5637 Fillmore St., Chicago 44, Illinois
114 Liberty St., New York 6, N. Y.

If you write maker identify as IEN - 13035

B.F.Goodrich

TWAP ANALYSIS PLAN cuts materials handling costs

Need tires to resist cuts and snags?



Unusual equipment? Cumbersome loads?

How to save up to 50% on industrial tires and wheels

● Materials handling costs going up? Then perhaps you should be using different types of industrial tires and wheels. The right type tires wear longer, decrease maintenance costs, reduce repair time. It takes expert advice to pick the right tire for the job—advice you can get *free* with the B.F.Goodrich Tire & Wheel Analysis Plan. A trained BFG man studies your equipment, loads, hauling surfaces and any special problems. He makes impartial recommendations as to the right tread compound and design, type and size tire for your job. He gives maintenance tips, too.

You can be sure the TW Analysis man's advice will be unbiased, for B. F. Goodrich makes a complete line of tires.

Here's your opportunity to save as much as 50% on industrial tire and wheel costs with this free, no-obligation service. Just call the local BFG retailer or send in the coupon. B.F.Goodrich dealers sell and service a complete line of industrial tires.

A special TW Analysis Plan is available for manufacturers of industrial hauling equipment.

The B. F. Goodrich Co.
Department TW-29
Akron, Ohio

Please give me additional information on your new Tire and Wheel Analysis plan.

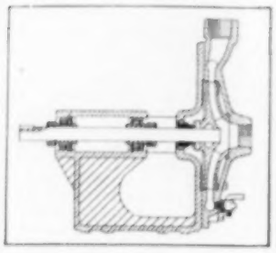
Name_____
Title_____
Company_____
City_____ State_____

B.F.Goodrich

If you write maker identify as IEN - 13037

PUMP . . Single stage centrifugal flows water through cooling jackets

Source: GARDNER-DENVER CO.
50 So. Front St., Quincy, Ill.



To bolt in position

Model CAY is a new single stage centrifugal pump characterized by its ability to deliver equally well with rotation in either direction. It has been developed to circulate water through the cooling jackets in air compressors, diesel engines and similar water cooled equipment. Drive can be reversed without affecting the delivery. Also the pump can be installed in any position on the machine it is serving.

At 2,000 rpm. it delivers 50 gpm. against a 40-ft. head. At 1,150 rpm. it delivers 10 gpm. against a 15-ft. head. The drive shaft is mounted on pre-lubricated ball bearings. A shaft seal closes the impeller chamber.

If you write maker identify as IEN - 13038

MARKING . . Plastic discs, white or yellow, to outline aisles

Source: CAMPRO SALES CO.
1302 Fourth St. S. W., Canton 2, Ohio

10 cents each

Tenite plastic is employed in injection molding to produce a new Saf-T-Line marker to be positioned at intervals on a floor or in a yard. The plastic measures about ¼ in. in height in the center and tapers to a feather edge. It can be secured by nailing or adhering to the surface. The material is not subject to attack by oil, grease or cleaning solvents.

If you write maker identify as IEN - 13039

BRASS . . Company's history is traced by book from 1802 up to the present

Scoville Mfg. Co.
101 Mill St., Waterbury 9, Conn.

"Brass Roots" titles 28-page booklet, available on letterhead request, issued by the company to commemorate the 150th anniversary of the brass industry and its founding by Abel Porter & Company. You may be interested to contrast the difference between the method of casting and rolling employed in 1802 with the continuous casting and rolling of mile-long strips used today in the manufacture of brass.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13040

WALTON TOOLS

TIME AND LABOR SAVERS FOR MACHINE SHOPS AND INDUSTRY

(1) CUT COSTS OF REMOVING BROKEN TAPS WITH
Walton Tap Extractors

Universally used for removing stubborn, bulky taps that break off deep in threaded work. Quick, easy, inexpensive. Will not damage threads.

(2) REDUCE TOOL CHANGE-OVER TIME—TRY THESE
Walton-American Tool Holders

Many holders in one. Head will swivel around on entire circle. May be set for straight, right or left hand offset positions. Will hold with perfect grip any size square or round tool bit or boring bar from ⅛" to 7/16".

(3) REMOVE BROKEN PIPES AND STUDS EASILY AND QUICKLY WITH
Reps Pipe & Stud Extractors

When faced with broken pipes or studs that defy movement—here's the tool. Makes a strong, four-point grip without need for hammering or pounding. Hardened steel—will remove any material.

Send for Catalog No. 15 of all Walton Tools

THE WALTON CO., Hartford 10, Conn.

If you write maker identify as IEN - 13041

THE NIBBLEX

even cuts CORRUGATED SHEET METAL as clean as a whistle! NO SHEARING ACTION - BUT

A NEW PRINCIPLE OF A DIE and PUNCH
No Bending • No Burrs • No Rough Edges

Fits any ¼" drill, air or electric. Precision made. Weighs only 11 ozs. Still cuts up to 20 ga. regular steel, 16 ga. tempered metals. Cuts circles 1" radius. Uses side punch for corrugated sheets, straight punch for flat.

Price only $13.75 with one punch. Additional punch $3.15

TRY IT FREE FOR TEN DAYS WITHOUT OBLIGATION
Pay only if you keep it.

Nord INTERNATIONAL CORPORATION
P. O. Box 44 N Denville, N. J.

If you write maker identify as IEN - 13042

Speed Way Speed Sander

Motor Driven 3/16" Orbital Motion

$34.50

Makes a hundred tedious jobs fast and easy. Will sand to the bare wood or metal, featheredge, or smooth and polish to a "piano finish." Powerful direct-connect, 3450 r.p.m. 110 v., A.C. air-cooled motor. No gears, nor gear-housing to collect grit and dust. Sealed ball-bearing thruout. Cast-aluminum body and chrome plated—in hand weight only 5 lbs. Natural grip, all-position handle with sliding thumb switch and 3 wire rubber-covered cord.

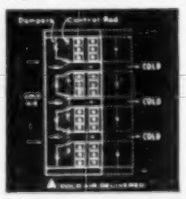
Sands Cleans Smooths Polishes

Three 4½" x 5½" coverings cut from standard 9" x 11" abrasion sheet.

WRITE FOR CIRCULAR
Speed Way MANUFACTURING CO.
1885 So. 52nd Avenue • Cicero 50, Illinois

If you write maker identify as IEN - 13043

FOR FRESH AIR SUPPLY, FOR DRYING FOR PROCESS HEATING

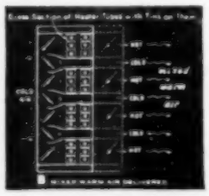


• WING •

VARIABLE TEMPERATURE HEATER SECTIONS

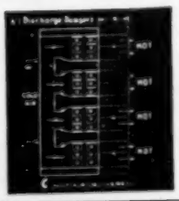
Highest heat transfer efficiency, lowest resistance to air flow, avoid expansion strains.

Cannot freeze even when the entering air is at a very low temperature—because the heating element is always under full steam pressure.



Tubes may be easily repaired or replaced . . . have leak-proof, steam-tight joints.

Built-in multiple by-passes insure uniformity of temperature without stratified hot or cold layers. Air streams mix almost instantly. Write for a copy of Bulletin HS-3.



L. J. Wing Mfg. Co.
160 Vreeland Mills Road
Linden, N. J.
Factories: Linden, N. J., Montreal, Canada
Offices in principal cities

If you write maker identify as IEN - 13044

HEAT SAVER! INSTALLED WITHIN 3 HOURS!

KEEP WINTER OUT OF YOUR PLANT!

PREST-O-MATIC

The COMPLETE ELECTRICAL DOOR UNIT

Fully automatic, motor-operated, for approach pull-cord, floor plate or electric eye control. Includes doors, frames, ALL hardware and motor operator all ready for installation by plant crew in 3 hours!

NOTHING ELSE TO BUY • NO ALTERATIONS REQUIRED • PERMIT FULL USE OF DOORWAY WIDTH

OPEN OR CLOSE IN 3½ SECONDS

Designed "in balance" for faultless functioning, unconditionally guaranteed, with or without pass doors. Trial orders have brought scores of reorders from large and small manufacturers. Get Catalog details!

CLARK DOOR COMPANY

519 Hunterdon Street • NEWARK 8, N. J.

If you write maker identify as IEN - 13045

ANNOUNCING the New FOLD-A-WAY TRADE MARK SCAFFOLD

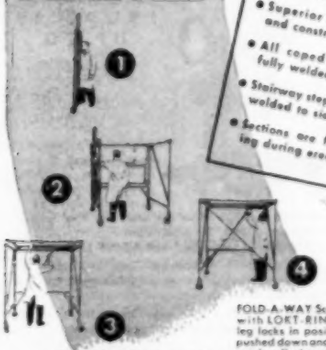
Here is an aluminum rolling scaffold which, because of exclusive design features, brings new ease of handling. For example, during erection the end frames swing open while scaffold is in a *standing* position. Maximum swing is 90 degrees, permitting man to stand *within* base area.

FOLD-A-WAY Scaffold stands freely yet will not "fold under" while being erected; upper folding sections stand with only two sprockets in position. Base dimensions: 4'6" x 6'. Sections fold to compact, 6½"-thick package. Approved by Underwriters' Laboratories Inc. Sectional Aluminum Scaffolds or sectional components for upper sections of FOLD-A-WAY Scaffold also available.

NO ACROBATICS—NO FLIP-FLOP!

Here's How One Man Sets Up FOLD-A-WAY Section with Minimum Movement—

In Less Than a Minute



Safety Features

- Superior workmanship and construction
- All capped tube joints fully welded
- Stairway steps capped and welded to side rails
- Sections are free-standing during erection

FOLD-A-WAY Scaffolds available with LOKT-RING Leg (above)—leg locks in position when ring is pushed down and turned; provides quick adjustment with safety . . . no pinched fingers. Standard leg—adjusted by simple twist of knurled nut.

For full information, write today for Bulletin ASF-1.

Gas Rum Lumber Scaffolding

for Greater Safety...Efficiency...Economy

THE PATENT SCAFFOLDING CO., Inc

38-21 12th Street • Long Island City 1, New York

Dept. IEN, West Coast Plant: 6931 Stanford Ave., Los Angeles

If you write maker identify as IEN - 13047

TRUCK . . Motor driven low lift platform or pallet design, 2 ton load

Source: LEWIS-SHEPARD PRODUCTS INC.
190 Walnut St., Dept. R-1, Watertown 72, Mass.

Features stability

The load on this new Model-M Spacemaster truck is carried on two wheels and two casters. It is driven and steered by a power wheel forming part of a drive unit. This unit is hinged to the load carrying portion of the truck so weight on the wheel is constant. Position of the drive and the load carrying casters permits the platform design, with a 48-in. load, to operate in 6-ft. aisles and the pallet type with a similar load length in 7-ft. aisles.

The operator rides in standing position with controls and steering wheel in front of him. The storage battery that provides power for the lift and travel movements is located between the controls and the load.

If you write maker identify as IEN - 13048

BELT DRESSING . . Liquid material acts at once when sprayed on a belt

Source: A. W. CHESTERTON CO.
7 Ashland St., Everett 49, Mass.

List is $1.50 per can

New packaging in a pressurized spray container is announced by the company for its previously developed liquid belt dressing known as Belt-Flo. The new Spragrip material will prevent slippage of slack belts without gumming or glazing the belt. Application can be made on flat or V-belts. Packaging is twelve 12-oz. cans per carton.

If you write maker identify as IEN - 13049

PROTECTING . . Pipe rail and fittings, made to order, porcelain enamel finish

Source: SEAPORCEL METALS INC.
28-22 Borden Ave., Dept. IEN, Long Island City 1, N. Y.

Decorative, safe

Typical pieces are shown in the illustration of a new porcelain enameled pipe railing which the company offers to manufacture in specified shapes, heights, unit lengths and color. The only limitation is that pipe runs between vertical members will not be more than 5½ feet.

The company supplies all of the pieces finished and ready to assemble on the job by means of concealed internal bolt fastenings. Uprights can be decorative shapes as well as straight. A typical handrail measuring 3 ft. in height with 5½-ft. runs lists at $3 per linear foot.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13050

At Cleveland Builders Supply . . .

. . . with Robbins and Myers "Freeways" handling. At the "Dos Plank" section, materials handling traffic has been completely separated from ground traffic with this result . . . no traffic jams. Materials are carried over rather than around obstacles. Utilization of floor space has gone up . . . materials handling time and cost has gone way down.

Two completely power driven, crane mounted, R&M two-ton capacity twin hoists handle 7,200 lb. "Dos Plank" assemblies throughout the production and storage areas. A separate one-ton capacity R&M "T" hoist similarly mounted serves as a feeder system moving single 1,800 lb. plank assemblies into the final production areas.

R&M representatives know the advantages, the mechanics of applying "freeways" handling systems to traffic problems in your plant. We suggest that you start taking advantage of this wealth of experience now by writing for Bulletin No. 1-1024.

TAKE IT UP WITH

ROBBINS & MYERS INC

HOIST AND CRANE DIVISION, SPRINGFIELD 99, OHIO

If you write maker identify as IEN - 13051

FASTER! with HANSEN

Hansen speeds attaching wires in radios, TV, screens, curtains, etc.

1001 Uses

— the TACKER that SAVES TIME . . STEPS . . MATERIALS

Lip fasters available for tacking gaskets, channels and other raised surfaces.

SAVES TIME in all types of tacking and fastening. Fast, easy one-hand operation. Tacker operates fast as you can grip.

SAVES STEPS. Self-contained. Ready for instant, continual use. Vest-Kit for quick refills. No back-tracking.

SAVES MATERIALS. Balanced design insures accurate, precision driving. Economical efficient use of materials.

REQUEST BOOKLET

36 MODELS IN STAPLE SIZES

A.L. HANSEN MFG. CO.

5051 RAVENSWOOD AVE. CHICAGO 40 ILLINOIS

If you write maker identify as IEN - 13052

BENDS PLATE ½" x 20'-0".

BUILT FOR HEAVY DUTY SERVICE

This big machine is one of a complete line of Steelweld Presses designed for heavy production work. Bending, forming, blanking, drawing, multiple-punching can be done quickly. Beds of long machines are made extra deep to eliminate deflections and assure straight accurate bends. Complete line for thicknesses to 1¼" and lengths to 20 ft.

Send for free copy of catalog No. 2010.

THE CLEVELAND CRANE & ENGINEERING CO.
4247 East 281st St., Wickliffe, O.

STEELWELD PRESSES

If you write maker identify as IEN - 13053

STOP ACCIDENTS with BRADY SAFETY SIGNS

Here's an AMAZING BRAND NEW SAFETY SIGN that will be welcomed by Safety Men! Brady Safety Signs stick to wood, glass, metal, concrete, etc. without moistening. May be applied to any clean surface in a jiffy. No screws, nails, bolts or skilled help necessary. All you do is peel from card, apply where wanted and the sign is up to stay.

Brady Safety Signs are made of durable cotton cloth, Silicone Coated to resist dirt, grime and moisture. CONFORM TO ASA Standard Z35.1-41. Select your requirements from a complete catalog of standard safety messages. Cost only a few cents per sign. Immediate delivery. Specials made to order.

WRITE FOR Free SAMPLES AND USEFUL CATALOG

MANUFACTURERS OF SELF-STICKING PRODUCTS

W. H. BRADY COMPANY

743 W. GLENDALE, MILWAUKEE, WIS.

If you write maker identify as IEN - 13054

SPRAY NOZZLES... two guides to proper selection!

No matter what you may face in the way of a spraying problem, it can be solved quickly and at low cost with Spraying Systems Spray Nozzles. Two fact-packed catalogs—No. 22, General Industrial Spray Nozzles, and No. 23, Pneumatic Atomizing Nozzles—are yours for the asking. They show you all the various types of spray nozzles available . . . explain design and construction . . . and outline spray characteristics such as atomization, impact of spray and capacity. Write for your copies today.

SPRAYING SYSTEMS CO.
ENGINEERS AND MANUFACTURERS
3208 W. RANDOLPH STREET BELLWOOD, ILLINOIS

WRITE FOR CATALOGS NO. 22 AND NO. 23

If you write maker identify as IEN - 13055

MODEL P-17
CLARKE FLOOR MAINTAINER
Job fitted sizes for every application. Scrubs, waxes, polishes, sands, steel-wools, and shampoos floors to perfection. Four sizes.

Clarke is the cure for heavy floor traffic in any building. It's easy to keep floors clean, waxed and polished with a multiple-duty Clarke Floor Maintainer on the job. Special floor care operations . . . rug shampooing, steel-wooling and sanding are quickly, quietly and economically accomplished. Floor maintenance costs take a nose-dive when superior Clarke equipment is at work . . . and we'd like to prove this to you in your own building. For a free demonstration, send the coupon below today!

MODEL WD-23
CLARKE WET AND DRY VACUUM CLEANER
Picks up water, dirt and dust. Quick-draining dump valve eliminates heavy lifting

CLARKE SANDING MACHINE COMPANY
Muskegon, Michigan
Floor Sanding . . . Edging . . . Maintenance Machines . . . Portable Hand Sanders

CLARKE SANDING MACHINE COMPANY
2811 Clay St. • Muskegon, Mich.

Please rush me hints on easier and faster floor care and more information on the following machines:

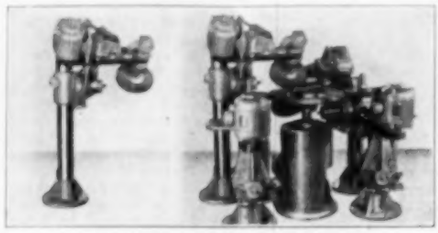
☐ Clarke Floor Maintainer ☐ Clarke Wet and Dry Vacuum Cleaner
☐ Please arrange a free demonstration

NAME _____
ADDRESS _____
CITY _____
STATE _____

If you write maker identify as IEN - 13057

POLISHING . . Motor driven head positions universally on a floor stand

Source: MURRAY-WAY CORP.
P. O. Box 180-A, Birmingham, Mich.



For single or multiple application

Series 260 is a new design of the company's universal polishing head assembly, previously described IEN-2500-51. The head mounts on a floor stand and can be used singly or in multiple for specified operations such as the turbine disc slot deburring job shown in the illustration. Wheels or buffs can be applied on the motor driven spindle and can be brought into any desired position by operating the head adjustments.

Two sizes take 5 to 7½-hp. and 10 to 15-hp. motors. Both include pneumatic controls backing up the spindle for constant work pressure while traveling over uneven work.

If you write maker identify as IEN - 13058

DRIVE . . Worm-type reducer, nine ratios, ½ to 3 hp. capacities

Source: EBERHARDT-DENVER CO.
1418 W. Colfax Ave., Denver 4, Colo.

Load and sound tested before shipping

Model 3L2 is a new worm-and-gear speed reducer with shafts mounted at right angles on 3.250-in. centers. The input shaft and worm are integral and made of alloy steel, hardened, ground and polished. The output shaft mounts a bronze worm gear and is made of ground carbon steel. Both shafts ride in Timken bearings.

The housing is machined on its top and bottom surfaces so either can be used as the mounting base for assembly in any of three positions as shown in the illustration.

Identify as IEN - 13059

Ask for a copy of the new $30,000 Mechanical Design Award Program, by James F. Lincoln Arc Welding Foundation in Cleveland. Read how you can participate in the competition for the 101 awards for papers on the subject of arc welding. The competition will close on July 27, 1953.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13060

FREED

TRANSFORMERS

MILITARY COMPONENTS TO SPECIFICATIONS MIL-T-27 & ANE-19

Pulse Transformers
Filter Reactors
Charging Reactors
Saturable Reactors
Toroid Inductors
Low Pass Filters
High Pass Filters
Band Pass Filters
Discriminators
Plate Transformers
Power Transformers
Filament Transformers
Vibrator Transformers
Input Transformers
Interstage Transformers
Driver Transformers
Output Transformers
Modulation Transformers
Blocking Oscillator Transformers
Band Elimination Filters

INSTRUMENTS

NO. 1030 B MEGOHMMETER — DIRECT READING
Self-contained and A.C. operated with electronically regulated supply. 1 megohm to 2 million megohms.

NO. 1010 COMPARISON BRIDGE
Self-contained and A.C. operated. For rapid and accurate test of Resistors, Condensors and Inductors.

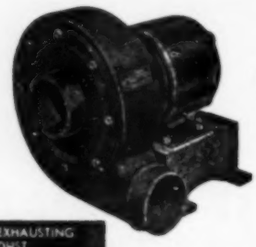
OTHER FREED INSTRUMENTS
NO. 1030 Low Frequency Q. Indicator
NO. 1110A Incremental Inductance Bridge
NO. 1150 Universal Bridge
NO. 1170 D.C. Supply
NO. 1210 Null Detector and Vacuum Tube Voltmeter
NO. 1140 Null Detector Amplifier
NO. 1040 A.C.—V.T. Voltmeter
NO. 1250 Decade Condenser
NO. 1410 Harmonic Distortion Meter

Send for Complete Catalog describing all Freed Instruments and Transformers

FREED TRANSFORMER CO., INC.
17328 Wainfield St., Brooklyn (Ridgewood) 27, N.Y.

If you write maker identify as IEN - 13061

THE Sutton MOTOR DRIVEN PRESSURE BLOWER



THREE SIZES ¼, ½, 1 H.P.

USE FOR
- EXHAUSTING
- DUST
- SMOKE
- FUMES
- VAPOR
- FORGE BLASTING

CONVEYING COTTON, WOOL, SHAVINGS
COOLING AND DRYING

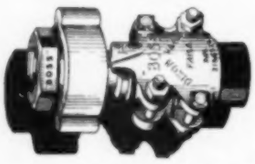
MADE OF LIGHTWEIGHT CAST ALUMINUM ALLOY, CENTRIFUGAL TYPE. Direction of discharge may be changed to any of eight 45 degree positions. Straight wall construction reduces windage and increases efficiency. Standard 3450 r.p.m. direct-connected 60-cycle ball bearing motor, open or totally enclosed types. Capacities, 100 to 800 cu. ft. per min. at static pressures from ½" to 6".

Write for LITERATURE AND PRICES

Sutton *Manufacturing Corp.*
126 W. WILSON AVENUE NORFOLK, VIRGINIA

If you write maker identify as IEN - 13062

"BOSS"



WASHER TYPE FEMALE COUPLING
STYLE W-16

For leakproof, durable connections on hose for every service—steam, air, gas, water, oil butane, hydraulics—high or low pressure. Furnished with super-strong "Boss" Offset and Interlocking Clamps. All parts (except washer) steel or malleable iron, rustproofed. Deep corrugations on stem smoothly rounded to prevent damage to hose tube. Sizes ¼" to 6", inclusive.

From Your Hose Supplier or Industrial Distributor

DIXON VALVE & COUPLING CO.
PRODUCERS OF *The Quality Line* COUPLINGS • NIPPLES • MENDERS • CLAMPS
"BOSS" "SJ-BOSS" "DIXON" "KING" "AIR KING" "DIX-LOCK"
PHILADELPHIA, PA. BRANCHES: CHICAGO • BIRMINGHAM • LOS ANGELES • HOUSTON

If you write maker identify as IEN - 13063

LIGHTNING-FAST ELECTROPUNCH

WIDELY USED TO
STAKE
MARK
SWAGE
CUT OFF
RIVET
CRIMP
BEND
PUNCH
DIMPLE

PRODUCES UP TO 10,000 PIECES PER HR.

This versatile low cost electric impact hammer produces up to 10,000 pieces per hour using automatic switching — as high as 5,000 pieces per hour with hand or foot switching. Ideal for steel stamping, inspection or identification marks on small defense parts.

ELECTROPUNCH is portable—plugs into any 115V A. C. outlet. Lightest model (illustrated) sells for only $90.75.

ELECTROPUNCH quickly pays for itself. Investigate its possible applications in your plant now!

Write for descriptive folder.

BLACK & WEBSTER, INC.
Dept. 17, 445 Watertown St., Newton 58, Mass.
Phone: Frank Webster Bigelow 4-6370

If you write maker identify as IEN - 13064

No Time Wasted!
WHEN WORKERS WEAR STASAFE WINDSOCKS

The Safety Hat Liners That Need No Installation

9" length $2.64 Doz.
11" length $3.00 Doz.

Windsock is a throw-away type head covering that's easy to use. Inexpensive—it actually costs less than the *time alone* spent by a worker in installing or in removing a permanent type liner. Warm, lightweight and snug-fitting, Windsock puts an end to those chilly drafts that whistle between the safety hat shell and cradle.

Write for Descriptive Bulletin No. 569

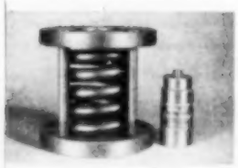
STANDARD SAFETY EQUIPMENT COMPANY
232 West Ontario St. Chicago 10, Ill.

If you write maker identify as IEN - 13065

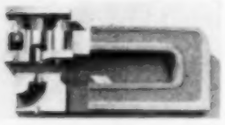
Announcing the New Revolutionary WALES *Hydra-Spring*
With Up to 600% More Pressure

(Patents applied for)

Showing a group of Wales Hydra-Springs in a plastic injection mould die.



The small, compact Wales Hydra-Spring delivers as much spring pressure as the big, heavy railroad car coil spring.



Showing cutaway view of Wales Type "HS" Hole Punching Unit for punching and stripping *material* up to ¼" thick. The heart of the Wales Type "HS" Hole Punching Units is the pair of Wales Hydra-Springs.

Wales Hydra-Springs SOLVE THE AGE OLD STRIPPING PROBLEM by providing *much greater* stripping pressure than the ordinary coil springs of similar size. In addition to simplifying die design and die making, *Wales Hydra-Springs make possible die operations that were previously impossible.*

For the first time, stripping pressures may be adjusted by simply adding or reducing the volume of SPECIAL COMPRESSIBLE FLUIDS KNOWN AS WALES COMPROILS.

Yes, there is always something new in the Wales Line. This time it is the three models of Wales Hydra-Springs. It is too big a story to tell here so write TODAY for complete information.

WALES-STRIPPIT CORPORATION
GEORGE F. WALES, *Chairman*
361 PAYNE AVE., NORTH TONAWANDA, N. Y.
(Between Buffalo and Niagara Falls)
WALES-STRIPPIT OF CANADA LTD., HAMILTON, ONTARIO
Specialists in Punching and Notching Equipment

If you write maker identify as IEN - 13067

TESTING . . Automatic oscillograph records disturbances in power circuit

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

No operator needed

New design of the company's Type PM13 automatic oscillograph includes a new photographic time recorder to show the year, month, day, hour and minute that an electric disturbance occurs. The new equipment is also fitted with a new light source to simplify lamp changes. It is available as a conversion kit for existing instruments of this type.

Six permanent magnet oil damped galvanometers, with associated shunts and resistors, make six record tracings on a photo-sensitized paper measuring 4¼ in. in width. An optical system transmits light to the galvanometer mirrors and from there to the photosensitive paper which is moved at a constant high speed by a direct current motor. Relays and controls regulate starting and stopping after a predetermined interval.

The oscillograph record permits analysis of the phenomena that accompany transient and unanticipated disturbances and faults in power lines showing magnitudes, quantities, wave shapes and phase relationships.

If you write maker identify as IEN - 13068

FEEDING . . Proportioning pump meters liquids into process lines

Source: AMERICAN INSTRUMENT CO.
8032-48 Georgia Ave., Silver Spring, Md.

Ask for Bulletin 4061

Micro-Flex trade names a new line of pumps that can be set to deliver exact adjustable amounts of liquids into chemical processes, to proportion one liquid into another, to inject liquids into high pressure vessels, to create high pressures for hydrostatic testing. Three sizes rate to 7,500, 15,000 and 30,000 lb. in delivery pressure. Corresponding displacements, in the duplex design illustrated, are 0.46, 0.26 and 0.12 cu. in. per stroke. Overall dimensions are 24 by 26 by 18 inches.

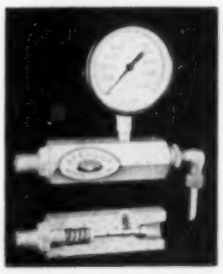
The design is characterized by the positive driving linkage and adjustment that positions the pumping lever fulcrum to obtain varying delivery amounts and to completely drain the cylinder at any setting. Piston and cylinder assemblies are made of stainless steel in standard construction, can be specified in other alloys. The check valves are removable for cleaning or replacement. Drive is by 1-hp. motor.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13069

(A PAID NEWS ADVERTISEMENT BY SPRAGUE ENG'G & SALES CORP.)

PROTECT YOUR GAGES!



New Shut Off Valve automatically cuts out gage from system when hydraulic or pneumatic pressure goes beyond its operating limit. Automatically opens when pressure is again within operating range of gage. (Cut-in point approx. 80% of set cut-out point.) Available for low pressures—30, 60, 100, 200 and 300 PSI. and high pressures—500, 1000, 1500, 2000, 2500, 3000 and 5000 PSI. Sprague Gage Shut Offs installed in a hydraulic system with multiple gages of various ranges, save valuable man hours. They eliminate the necessity of the operator opening and closing manually operated shut off valves for the various gages in the system. Supplied with standard pipe thread connections but can also be furnished with AN adaptors for aircraft fittings. Connection to the system is made at the end of shut off, ½" pipe thread. Connection to gage is made on the side of shut off, ¼" pipe thread. Overall length 5½ inches. Body is 1½ inch hexagon stock. Other models with bronze or stainless steel bodies available for water service. Finest construction. Individually tested and fully guaranteed. When ordering, specify capacities desired. Write today for bulletin.

SPRAGUE ENGINEERING & SALES CORP.
Budlong Ave. at 135th St., Gardena, Calif.
Designers and Manufacturers of Precision Aircraft and Industrial Test Equipment.

If you write maker identify as IEN - 13070

CUT SPRAYING COSTS with CO_2 POWERED GUN

NO HOSES • NO COMPRESSOR • NO ELECTRICAL OUTLETS • NOTHING EXTRA TO BUY!

BECKER *PRESSURE-TYPE* **SPRAY GUN**
USED EXTENSIVELY IN FACTORIES, HOMES, FARMS, INSTITUTIONS

For:
- Paints
- Oils
- Varnishes
- Enamels
- Fire-Proofing
- Decorating

Handy for hundreds of industrial uses where expensive, heavy, cumbersome compressor type spraying is unnecessary. Becker Spray Gun is ruggedly built; heavy gauge (21 liquid oz.) steel container, cast aluminum head, brass and stainless inserts. Powerful CO_2 cartridges spray up to one container-full. See your Distributor or order direct, postpaid. Extra CO_2 cartridges at your dealer's or 10 for $1 postpaid.

SULLIVAN-BECKER CO., Dept. 192-L, Kenosha, Wis.

If you write maker identify as IEN - 13071

Whether you slap-trowel it... or gun it...

You reduce refractory maintenance costs with J-M BLAZECRETE

Your labor costs for refractory maintenance are materially reduced when you build and repair linings with Johns-Manville's new hydraulic setting Blazecrete.*

Blazecrete is mixed with water just like ordinary concrete. It goes on fast . . . without laborious ramming or tamping. Blazecrete linings resist spalling, withstand slagging action, and are not harmed by rapid changes in temperature.

To meet various operating temperatures and service conditions, there are *three* types of Blazecrete:

3X BLAZECRETE. For temperatures through 3000F. Excellent for heavy patching, especially where brickwork is spalled or deeply eroded. Builds and repairs forge furnace linings, lime kilns, burner blocks.

STANDARD BLAZECRETE. For temperatures through 2400F. For building new and repairing old refractory linings. Can be used by boiler manufacturers to replace fire clay tile in wall construction.

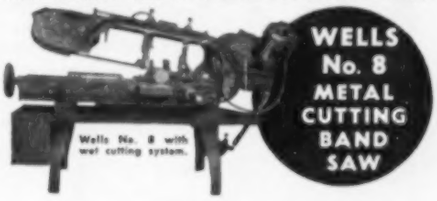
L. W. BLAZECRETE. For temperatures through 2000F. An *insulating* refractory . . . light in weight, low in thermal conductivity. For building new linings and repairing old.

For details, send for Brochure RC-28A. Write Johns-Manville, Box 60, New York 16, N. Y. In Canada, 199 Bay St., Toronto 1, Ontario.

Johns-Manville BLAZECRETE
*Reg. U. S. Pat. Off.
REFRACTORY LININGS

If you write maker identify as IEN - 13072

On cut-off jobs . . . *This is the saw that* SAVES TIME . . . MONEY . . . MANPOWER



Whether it's for production, general utility or both, the Wells No. 8 is an investment that will pay for itself many times over in savings of time, money and manpower. These savings can mean a lot in any shop . . . why not find out what they can mean to you. The Wells No. 8 has a capacity 8" x 16", rectangular, 8" diam., rounds. It is powered by a heavy duty ½ H.P. motor. Other sizes also available. See your Wells Dealer for further information or write for literature.

Products by Wells are Practical

METAL CUTTING BAND SAWS
WELLS MANUFACTURING CORPORATION
1111 MADISON ST., THREE RIVERS, MICH.

If you write maker identify as IEN - 13073

NEW!

Tester For Pressure of RAM-ON-WORK

For Determining Total Weights or Total Pressure on Most Types of Presses

STUDEBAKER TOTAL PRESSURE TESTER

- Accurate reading
- Can be used vertically or horizontally
- Self-contained hydraulic unit
- Accurately calibrated
- Heavy duty construction
- Furnished in permanent instrument case
- Three sizes — 10M — 50M — 100M lbs.

Write for prices

Studebaker MACHINE COMPANY
1235 S. 9th Avenue • Maywood, Ill.

If you write maker identify as IEN - 13074

BRITEWAY

The Liquid Soap Floor Cleaner Used With Hard Or Soft Water

Economical! one cup to a pail of water

Looking for an all-purpose liquid soap cleaner that will do its job well under all conditions? The answer is BRITEWAY, Dolge-developed and tested to surmount hard-water and temperature-change barriers.

BRITEWAY will not separate, jell or harden even in sub-zero weather. Just put one economical cupful in a pail of water and watch it "suds-up" into a rich, cleansing lather. Approved by the U. S. Rubber Flooring Manufacturers Assn., for use on rubber floors. Excellent, too, for linoleum, mastic, wood—and painted or varnished surfaces.

Won't separate or freeze even at 16 below freezing!

On floors, apply BRITEWAY with a mop; on walls with a cloth. Just rinse off, and your job's done! BRITEWAY removes RUBBER BURNS completely!

Your Floors — and Walls — Will Appreciate BRITEWAY

Dependable **DOLGE**
WESTPORT, CONNECTICUT

If you write maker identify as IEN - 13075

REDUCE COSTS ON "SMALL-WORK" GRINDING & FINISHING JOBS with

Foredom FLEXIBLE SHAFT MACHINES

YOU GET ALL these superior features

- Feather-weight, finger-tip-controlled handpiece (pencil size or larger) which eliminates operator fatigue.
- Choice of 5 handpiece types (all instantly interchangeable). You fit the handpiece to the job at hand.
- Extra good flexing qualities in the flexible shaft assembly for effortless maneuverability.
- Longer motor life because motor is not dwarfed to fit the hand.
- High speed which does not drop precipitately under load.
- Silencer-equipped flexible shaft for vibration-free performance.

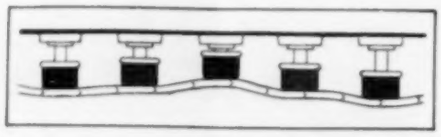
BENCH OR HANG UP MODELS FOR HEAVY OR LIGHT DUTY
also flexible shaft tools attachable to your own drill press or motor
There are over 100,000 FOREDOMS in use
SEE YOUR INDUSTRIAL SUPPLY DISTRIBUTOR. IF HE CANNOT SUPPLY YOU WRITE TO US. MAIL COUPON FOR CATALOG.

FOREDOM ELECTRIC CO., Dept. 4160-N,
27 Park Place, New York 7, N. Y.
Send your catalogue No. 4160-N, showing different uses of Foredom Flexible Shaft Machines
Name .....
Address .....
City & Zone ..... State .....

If you write maker identify as IEN - 13076

FURNITURE . . Self-leveling glide compensates for uneven floor surface

Source: EVER-LEVEL GLIDES INC.
208-12 Spring St., New York 12, N. Y.



Steel cup encloses silicone

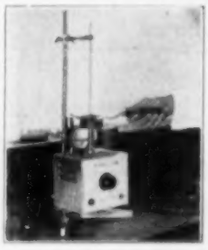
Wobble-Stopper is a new metal glide with ability to contract or expand upon application or release of a load such as that represented by a chair, table or other piece of furniture. As a result the glides will extend themselves until they make contact with a depressed point in a floor. At the same time those that are carrying the load at the moment will compress. This action is controlled by the silicone stretchable and compressible material with which the small housing of the glide is filled.

Five designs in the line are fitted with a ¾ or 1-in. nail or with a ¾, 1 and 1½-in. stud for application. Range of vertical adjustment is between 1/16 and ⅝ inch. Load range is from 100 to 1,000 lb. maximum. Minimum load to operate the glide is from ½ to 15 pounds.

If you write maker identify as IEN - 13077

TESTING . . Flash point apparatus to investigate combustible materials

Source: FISHER SCIENTIFIC CO.
719 Forbes St., Pittsburgh 19, Pa.



For laboratory use

The company announces new design of its Cleveland Open Cup flash point testing equipment and production of three models, one fired by gas and two by electric elements. All three employ a gas flame to swing across the center of the sample cup from a torch pivoted in a special clamp. The electric Model A, shown in the illustration, operates on 110-volt 60-cycle ac. Model B operates on 220 volts. Both are equipped with ASTM thermometers. The gas heated design uses either artificial or natural gas.

Each new model is designed to meet ASTM specifications for determination of flash and fire points as given in Designation D92 and each is designed to protect the operator against the danger of burned fingers.

Identify as IEN - 13078

Sample of paper toweling containing Kymene resins, developed by Hercules Powder Company in Wilmington, has been enclosed in a folder and is available on request. The sample demonstrates the wet-strong characteristics imparted to the paper and the improved absorbency. The folder points out additional uses in map papers, V-board, bag papers.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 56

If you write maker identify as IEN - 13079

GRIEVE-HENDRY PORTABLE ELECTRIC OVENS...

Standard Models For Every Special Need!

Model CR-1
10 cu. ft. capacity—30" wide x 25" deep x 24" high. Removable shelves and drip pan . . . . . $79.50 f.o.b. Chicago

Portable. Costs less than 5¢ per hour to operate. Adjustable temperature control to 225° F. Fan driven forced air circulation. Uniform temperature throughout. Plugs into any 110V wall outlet—no special wiring required.

Can be used in a group or bank. Use them on the production line—save handling—hauling.

Quick Quotation Prompt Delivery Reasonable Prices as Ovens made to your specification

Other standard models with temperature ranges to 1000°F. available. Write for literature.

GRIEVE-HENDRY CO., INC.
1811 W. LAKE ST., DEPT. IEN • CHICAGO 12, ILLINOIS

If you write maker identify as IEN - 13080

NEW! Volatile Solvent

CARBON MET

A HALOGENATED AROMATIC HYDROCARBON

A specific replacement for toxic Carbon Tetrachloride

Out and out metal dry cleaning solvent and degreaser in ready-to-use "Handy Kit" containing Patented dip and drier basket.*

U. S. PAT. 2318842

- Quick Cutting solvent against stubborn dirt and grease.
- Non-Explosive and relatively non-toxic.
- Non-Corrosive to metals. • Fast, clean evaporation.
- Non-toxic . . . Ideal for degreasing and cleaning electrical parts.

MUCH FASTER CUTTING THAN "CARBON TET"
CAUSES NO RUSTING . . . LEAVES NO FILM
*also economical 55 gal. size drum kit.
Sold by industrial jobbers everywhere. Shipped "*Prepaid*" Express, if your jobber is out of stock.

IMMEDIATE DELIVERY — 1 GALLON OR A TANK CAR

CURRAN CORP. Mfg. Chemists LAWRENCE MASS.
120 South Canal St.

If you write maker identify as IEN - 13081

Remember the name "CORRUTUBE" for Continous Wall Flexible Tubing

All characteristics of this flexible, continuous metal tubing recommend it above other tubing or hose for a wide range of applications. In addition to extreme flexibility, it provides greatest resistance to fatigue under high temperatures and pressures, assuring long service, free from costly maintenance and repairs. For steam, gases, oil, water, chemicals and many other fluids; and to counteract vibration and misalignment. "Corrutube" is made in steel and bronze, separately or in combination; and in three styles: plain, laced (illustrated), and laced with outer steel casing. Write for catalog MH-45.

"Mulconroy Starts Where Others Stop!"

MULCONROY COMPANY
Hose Specialties Since 1887
5327 JEFFERSON ST., PHILA. 31, PA.

If you write maker identify as IEN - 13082

Rutted FLOORS . . . Inexpensively Resurfaced . . .

To suit a floor to heavy trucking . . . patching spalled concrete . . . pitching for drainage . . . or making hard floors warm and resilient . . . Tremco methods substantially save repair costs.

TREMCO MAN EXPERIENCE . . . gained through solving floor problems for a quarter century make effective results possible at low cost. Tremco Man, J. N. Cassella, expertly solved this problem of serious floor disintegration for Frederic B. Stevens Inc., Detroit, Mich., manufacturer of Foundry equipment. A trained Tremco Man like him is located near you.

For Safe . . . Speedy Heavy Materials Handling

Spalled and pitted floors were resurfaced with a half-inch layer of Maloamastic. Cassella's recommendations of proper aggregate mixture and resurfacing technique assured a lasting load bearing surface. Result: Durable and smooth floors and aisles for economical safe, speedy trucking . . . at a substantial savings. Write today for your copy of "Maloamastic Flooring." The Tremco Manufacturing Co., Cleveland, Ohio or The Tremco Manufacturing Co., (Canada) Ltd., Toronto.

TREMCO THE TREMCO MANUFACTURING CO. CLEVELAND OHIO

PRODUCTS AND METHODS FOR BUILDING MAINTENANCE

If you write maker identify as IEN - 13083

Two Beauties

Write For Descriptive Folder

Shown here is the new model "A-5" PEDRICK BENDING MACHINE. The 540 pounds one piece cast base replaces the four leg design, thus insuring ridigity. The power packed "A-5" will bend 2" standard pipe, 1¼" square and 1½" round solid bar stock, tubes structural shapes, etc. Equipped with 5 H.P. motor gearhead drive and controls for automatic duplicate bending, the "A-5" still sells for only $1975.00 U.S. Funds, FOB Factory.

PEDRICK TOOL AND MACHINE COMPANY
3640 N. LAWRENCE STREET, DEPT. 7
PHILADELPHIA 40, PA.

If you write maker identify as IEN - 13084

a Wealth of Technical Data on B&W STAINLESS TUBING for Pressure and Mechanical Uses

CHECK—CLIP—AND MAIL this listing for free copies

- ☐ TB-1 Properties and Methods of Working Seamless and Welded Tubing and Pipe of the B & W Stainless Croloys
- ☐ TB-11 Specifications for Seamless and Welded Tubular Products—Stainless, Alloy, and Carbon Steels
- ☐ TB-19 B & W Stainless Croloy Tubing Steels—Seamless and Welded, Condensed Technical Data
- ☐ TB-332 B & W Stainless Pipe, Seamless or Welded
- ☐ TB-335 Descriptive Terms, Steel Tubing
- ☐ TB-344 Applications of B & W Tubular Products—Stainless, Alloy, and Carbon Steel, Seamless and Welded
- ☐ TR-506 Properties and Characteristics of 27% Chromium-Iron
- ☐ TR-516 Some Experiences in Service
- ☐ TDC-130 B & W Stainless Pipe and Tubing, Croloy 18-8S (Type 304)
- ☐ TDC-132 B & W Stainless Pipe and Tubing, Croloy 18-8Cb (Type 347)
- ☐ TDC-133 B & W Stainless Pipe and Tubing, Croloy 16-13-3 (Type 316)
- ☐ TDC-134 B & W Stainless Pipe and Tubing, Croloy 25-20 (Type 310)
- ☐ TDC-138 B & W Pipe, Seamless and Welded—Carbon, Alloy, and Stainless Steels—Dimensions, Weights, Specifications, Grades, Analyses.
- ☐ TDC-140 B & W Stainless Pipe and Tubing, Croloy 12 Al (Type 405), Croloy 18 (Type 430), Croloy 27 (Type 446)
- ☐ TDC-143 B & W Stainless Tubing, Croloy 12 (Type 410), Croloy 12-2 (Type 414)
- ☐ TDC-148 Condensed Data on Working Seamless or Welded Tubing and Pipe—B & W Croloy Stainless Steels
- ☐ TA-1517 B & W Stainless Steel Tubing for the Food Processing Industry
- ☐ TB-328 How to Keep Down Maintenance Costs in Pulp and Paper Mills—B & W Tubing and Pipe, Stainless, Alloy, and Carbon Steels

THE BABCOCK & WILCOX COMPANY
TUBULAR PRODUCTS DIVISION
General Offices & Plants
Beaver Falls, Pa.—Seamless Tubing; Welded Stainless Steel Tubing
Alliance, Ohio—Welded Carbon Steel Tubing

B&W SEAMLESS and WELDED TUBES
TA-17988

If you write maker identify as IEN - 13086

CONVEYING . . Bucket elevator and feeder gently handles small work

Source: U. S. ENGINEERING CO.
40-26 22nd St., Long Island City 1, N. Y.

Made to order

Cylindrical buckets are secured to a chain and are fitted with hinged bottom plates in this new Lift-O-Matic conveyor. At the bottom of the inclined assembly is a rotating hopper to receive the work pieces from a Syntron feeder for measured delivery into the buckets. The bottom plates are held in closed position by a rail beneath the upward moving side of the incline.

The rail terminates near the top to permit the plates to hinge open for gentle discharge of the work. A cam brings them back to closed position to receive a new charge at the bottom of the run. Candies, cookies, small fastenings, are representative work pieces that can be handled to good advantage. Capacity is to 7,500 lb. of steel parts per hour standard.

If you write maker identify as IEN - 13087

BOILER . . Self-contained assembly, water tube design, oil and gas fired

Source: TITUSVILLE IRON WORKS
51 Industrial Ave., Titusville, Pa.

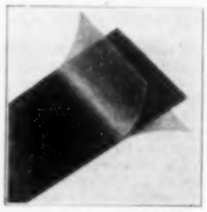
Please note our error

We made an error in quoting the height of the company's new Type WIP water tube boiler at 12 to 26 feet in IEN-10897-52. We should have said that the height is 12 ft., 2 in. on all sizes from 7,500 to 27,500 lb. of steam per hour.

If you write maker identify as IEN - 13088

INSULATING . . Asbestos sheet Fiberglas faced, varnish saturated

Source: NATVAR CORP.
209-13 Randolph Ave., Woodbridge, N. J.



Ask for Aboglas Bulletin

Aboglas trade names a new Class-B composite insulation consisting of a layer of varnish-saturated asbestos paper between facings of open-weave Fiberglas. The combination provides a tough flexible inexpensive sheet material that can be used in numerous places in the place of mica and other Class-B insulations. The sheet is clean, easy to handle. It does not flake and conforms to irregular surfaces.

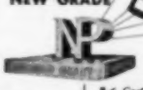
Two thicknesses are maximum at 0.027 and 0.054 inch. Sheet sizes are 36 by 36 inches. Minimum dielectric breakdown strength, based on 2-in. electrodes, is 12,000 and 19,000 volts in the two sheet thicknesses.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13089

NEWCOMER CARBIDE Specialists will gladly show you how to

WITH THE NEW GRADE **S-6** CUTTING CARBIDE



Highlights of the NEW S-6

S-6 Carbide is new and different — industry-proven on machining Armor plate, rough steel forgings and castings. Even though S-6 Carbide can be used at high machining speeds, its greatest tool life is obtained at speeds slower than those at which other grades of carbide can be successfully used. S-6 Carbide makes deeper cuts because it can be set for heavier loads. S-6 Carbide, because of its extremely high strength, is excellent for interrupted cuts.

Write today for Catalog No. 108 which shows all other standard grades of Newcomer Carbides.

NEWCOMER PRODUCTS, INC.
General Sales Offices
PITTSBURGH 21, PENNA.
Plants at LATROBE, PENNA.

If you write maker identify as IEN - 13090

THIS "BLOW HARD" MAKES A QUICK CLEAN-UP

Put a CLEMENTS-CADILLAC blower-suction cleaner into action and presto! — Dirt, Dust, and Grit vanish from every crevice of machinery and equipment. Then you can do some bragging — about this fast, easy, economical way to clean.

Eligible under C. M. P. regulations.

SAVE TIME - MONEY PREVENT DAMAGE TO MACHINERY WITH THE

Made in 5 models with attachments for every cleaning job.

PORTABLE COMBINATION BLOWER-SUCTION CLEANER

CLEMENTS CADILLAC

CLEMENTS MFG. CO.
6630 S. NARRAGANSETT AVE. CHICAGO 38, ILL.

ASK YOUR MILL SUPPLY DEALER OR WRITE US FOR DATA

If you write maker identify as IEN - 13091

DE WALT "3 adjustment action" assures easier, faster performance!

for
- PLANT MAINTENANCE
- PATTERN SHOPS
- CRATING AND BOXING
- CONSTRUCTION WORK

Here's the ideal, all-purpose machine to streamline your cutting operations, help to increase production and cut costs.

De Walt's "3 adjustment action" allows you to position saw for any desired operation... in seconds!

You can make 15 set-ups, 15 different cuts...in less than 15 minutes! You get precision, speed, complete safety. A De Walt does the work of many machines—takes up the space of one. *Write for catalog to: De Walt Inc., Dept. E-11, Lancaster, Pa.*

De Walt Inc. **DE WALT** Lancaster, Pa.

POWER SAWS

Subsidiary of AMERICAN MACHINE AND FOUNDRY COMPANY, New York

If you write maker identify as IEN - 13092

NEW ZENITH MAGNETIC SOLENOID CONTACTORS

★ SOLENOID OPERATED
★ FINE SILVER CONTACTS
★ SIMPLIFIED WIRING

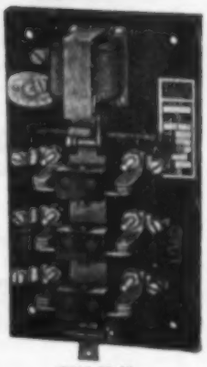
This ZENITH contactor is built to withstand the severe service demanded by loads based on Type-C lamps.

It is designed on the straight-line principle, with the solenoid being connected directly to the contact bar.

The advantage of this method of construction is its easy access to any part for quick inspection or service, without disturbing other parts.

Models: Size 1 -25 amps. Size 2 - 90 amps.

Either size can be supplied in any number of poles.



TYPE SC 33

SEND FOR FREE CATALOG

This big, illustrated catalog contains all the newest items in automatic control equipment made by Zenith. Write now for your Copy!

ZENITH ELECTRIC CO.
146 W. WALTON ST., CHICAGO 10, ILLINOIS

If you write maker identify as IEN - 13093

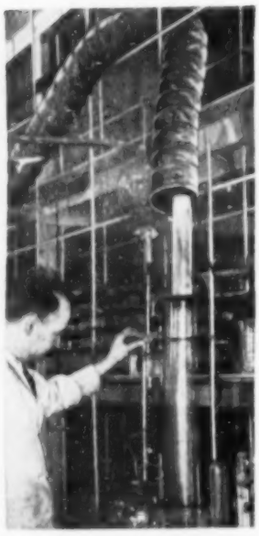
INDUSTRY HAS NEVER SEEN ANYTHING LIKE IT!

Characteristics And Recommended Usage For Natural And Synthetic Rubber Polymers, And Complete Design Data On Mechanical Rubber Specialties!

LAVELLE Rubber Company

1611 WEST HUBBARD STREET • CHICAGO 22, ILLINOIS

If you write maker identify as IEN - 13094



Why move work around

TO GET TO PRESENT EXHAUST DUCTING?

Take SPIRATUBE® to the job!

With SPIRATUBE — the new-type flexible ducting — you can set up production lines where you want them without expensive changes in your dust or fume removal system. SPIRATUBE connects quickly, easily to your present lines — and bends anywhere with minimum crimping. No turn is too short, no angle too acute. No elbows or special fittings to bother with in going around obstructions.

Best of all, YOU CAN INSTALL SPIRATUBE YOURSELF! That cuts down-time, keeps your production line going. The initial cost of Spiratube is small . . . and its life equals — sometimes exceeds — rigid ducts.

Standard sizes for all requirements are immediately available from well-stocked distributors — coast-to-coast!

For all ducting systems:

SPIRATUBE® FLEXFLYTE® AYRTUBE®

Flexible Tubing CORPORATION

Guilford, Connecticut Pasadena 1, California

FREE! Full details on this amazing, cost-saving ducting. Fill in coupon and mail.

Please send me your new catalog on Flexible Tubing products.

My application is _____

Name _____

Title _____

Company _____

Address _____

City _____ State _____ IN-1

If you write maker identify as IEN - 13096

HOIST . . Hand ratchet unit for lifting and pulling, to 1½ ton

Source: LITTLE MULE CORP.
P. O. Box 1462-A, Fort Lauderdale, Florida

Model 101 lists at $35

Little Mule trade names a new ratchet operated hoist that can be employed with its 16-ft. wire rope for direct pulling and lifting by means of a hook attached to the end of the rope. Pulling capacity can be doubled by employing the hook-equipped block. It forms a part of the standard assembly.

The hoist is made with an aluminum frame and a lever controlled ratchet action for lifting and lowering movement. The operating lever acts also as a safety element by bending before any mechanical part of the unit can be over-stressed.

If you write maker identify as IEN - 13097

SEALING . . Twisted paper cord for seaming or welting, three sizes

Source: PLYMOUTH CORDAGE CO.
51 Court St., Plymouth, Mass.

Size range
4/32 to 6/32 inch

Kraft Tissue and Kraft Coarse are two new twisted paper cords in the company's PlymKraft line. The tissue cord is made of multiple plies of small diameter light weight soft cords to provide a uniform welt filler that is flexible, smooth and soft. The coarse cord is made of multiple strands of small diameter yarns formed into a round flexible cord. It is particularly suited for uses such as back tailoring on upholstered furniture.

If you write maker identify as IEN - 13098

HANDLING . . Rocking cradle and lift attachment for acid carboys

Source: MORSE MFG. CO.
120-24 Dickerson St., Syracuse 2, N. Y.

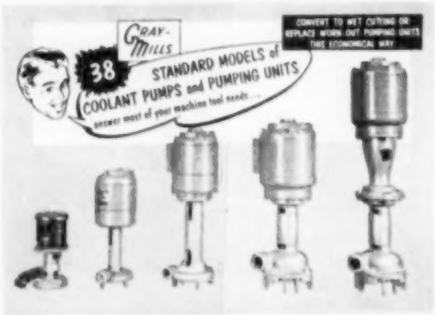
Drains last drop

A carboy secured in the company's previously developed rocking cradle can now be lifted to complete draining position by means of a new wheel equipped attachment. This attachment rides under the cradle rockers and is equipped with a lock hook to hold the cradle in inverted position.

The cradle itself is equipped with wheels so the unit can be used to move a carboy from one location to another as well as to dispense its contents. Sizes are available for carboys measuring 18 by 18 by 23 in. to 20 by 20 by 25 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13099



- To modernize dry machines for wet cutting.
- To equip new machines.
- For replacements.
- For "standby" service.
- For original equipment.

1/25 to ½ HP. High volume immersion type centrifugal pumps. Also 1/25 to ½ HP. high pressure gear pumps and complete coolant systems.

The GRAYMILLS line is stocked by leading distributors everywhere.

Send for new selection chart . . . tells the right pump or coolant system for the job.

GRAYMILLS CORPORATION

3731 N. Lincoln Ave. Chicago 13, Ill.

If you write maker identify as IEN - 13100

A Paid News Advertisement by National Molded Products, Inc.

SELF-LUBRICATING BEARINGS AND MECHANICAL PARTS

SINTRLOY — DUCTILOY — SEALALOY

SINTRLOY — Powdered Bronze Bearings are used by the millions in sweepers, refrigerators, washing machines, portable electric and pneumatic tools, medium and light industrial equipment.

DUCTILOY — Powdered Bronze Bearings and Mechanical Parts to be used in heavy duty applications where greater strength and shock resistance are required.

SEALALOY—Powdered Bronze Material used for mating rings in rotating mechanical seals to give excellent wearing qualities and shock resistance. Manufactured to your exact requirements.

MAY WE QUOTE ON YOUR SPECIFICATIONS AND PRINTS? NO OBLIGATION.

NATIONAL MOLDED PRODUCTS, INC.

1945 Mill Street St. Marys, Pa.

If you write maker identify as IEN - 13101

Phillips INDUSTRIAL TRAILERS

✓ FOR HAULING ALL KINDS OF INDUSTRIAL PRODUCTS—MATERIALS

✓ MADE IN SIZES AND CAPACITIES TO MEET YOUR NEED

✓ FEATURE TIMKEN BEARINGS PNEUMATIC OR SOLID TIRES ALL STEEL WELDED CONSTRUCTION

MODEL TF-60
6000 lb. Capacity

MODEL TD-1200
120,000 lb. Capacity

Write today for complete data!

Phillips Industrial Trailers simplify hauling of heavy loads in and around industrial plants . . . with substantial savings in time, effort, and money. Ruggedly built to withstand long, hard usage, these trailers are available in capacities from 6,000 to 120,000 pounds. Easily maneuverable—they can be used singly or in tandem, for every industrial hauling requirement.

MANUFACTURERS SINCE 1863 PHILLIPS MINE AND MILL SUPPLY COMPANY PITTSBURGH, PA.

MATERIALS HANDLING EQUIPMENT

2500 JANE STREET • PITTSBURGH 3, PA.

If you write maker identify as IEN - 13103

For best results in extruding or molding rubber or plastics

PELLETIZE

the stock first with

TAYLOR-STILES DICING CUTTER

This modern machine cuts the stock automatically, without rehandling, first into strips by rotary shear blades, and second by cross-cutting into cubes of uniform dimensions as small as 1/8" each way.

SEND FOR FREE BOOKLET

App 202 which describes this cutter as applied to rubber or plastic stock.

TAYLOR-STILES and Company — CUTTING MACHINES & KNIVES

44 BRIDGE STREET
RIEGELSVILLE, NEW JERSEY

If you write maker identify as IEN - 13104

"MITI-MITE" No. 250

DUPLEX MAGNETIC BASE LIGHTING UNIT THAT MOUNTS TO CURVED OR FLAT FERROUS SURFACES INSTANTLY!

This amazingly useful "MITI-MITE" unit solves lighting problems heretofore regarded as impossible. Eliminates cumbersome, haphazard clamping. Provides perfect illumination for practically all machines and operations.

SEND FOR BULLETIN NO. 604

Order from your mill supply dealer or send order with name of your mill supply dealer.

PRICE $18.50 COMPLETE

ENCO MANUFACTURING CO., DEPT. IE-112
4524 W. Fullerton Ave., Chicago 39, Ill.

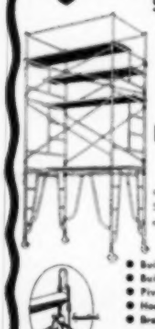
If you write maker identify as IEN - 13105

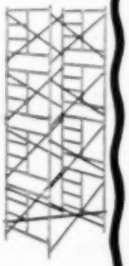
WORLD'S FASTEST, SAFEST SCAFFOLDING

WACO

ROLLING TOWERS
Speedy and simple for maintenance work!

SECTIONAL SCAFFOLDING
Saves hours in scaffold erection time!





BIG WACO FEATURES!

Only WACO features the original, proven "SPEEDLOCK". Speed, safety and convenience in scaffold assembly.

- Built-in, floating coupling pins
- Built-in ladders
- Pivoted cross-braces
- Heavy duty rubber tire wheels
- Brake-type casters

Phone your local WACO distributor today for a free demonstration. Distributors in all principal U.S. and Canadian cities.

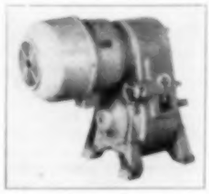
Write for free file folder

WILSON-ALBRECHT CO., INC.
DEPT. N, 2343 WOODDALE AVE
MINNEAPOLIS 16, MINN.

If you write maker identify as IEN - 13106

DRIVE . . Variable speed unit, motor and V-belt transmission

Source: STERLING ELECTRIC MOTORS INC.
5399-03 Telegraph Road, Los Angeles 22, Calif.



Totally enclosed

The company announces availability of its Speed-Trol, variable speed drive, in the range between 20 and 25 hp. with a new totally enclosed fan cooled motor. This motor provides both internal and external cooling in which internal air is circulated continuously by an internal fan through passages between the motor housing and the stator and through openings in the rotor. Heat conducted outward is picked up by an external fan located inside a removable grilled cover for dissipation in the air. Three ranges of speed variation are 2 to 3 to 4 to 1.

If you write maker identify as IEN - 13107

PROTECTING . . Gloves and pads with closed reinforcing zippers

Source: SURETY RUBBER CO.
221 Hall Ave., Carrollton, Ohio

Armor Grip designates a new line of work gloves in which closed flexible metal zippers are permanently bonded in synthetic rubber to the fingers and palms. The zippers add gripping action to the gloves and pads. They also resist wear. Sharp work edges will not cut through the zipper metal surfaces.

If you write maker identify as IEN - 13108

SAWING . . Portable tool attachment reciprocates blade, will pierce work

Source: TRI-SAW CORP.
6609-13 Clayton Road, St. Louis 17, Mo.

The company announces availability of a 4-oz. grease lubricator for use with its portable tool saw attachment as shown in the illustration. The lubricator applies at the single point where grease is required to keep the attachment in good working condition. Application can be made on portable tools rating to ½ in. to cut metals, fiber, wood. The saw blade is shaped to pierce the work so no starting hole is required for an internal cutting operation.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13109

Valves That Keep VISCOUS MATERIALS Flowing Freely

When you handle coal tar products, asphalts, resins, waxes, molten sulfur, varnish and other materials which congeal at ordinary temperatures, you won't be troubled with clogged valves if you use EVERLASTING Steam Jacketed Valves.

The ample jacket space of these valves surrounds the ports as well as the body . . . provides extensive heating surface and correct temperature to insure fluidity. Besides, the design of the valves is quick-acting . . . non-wedging . . . and self-grinding . . . and they have the straight-through flow and lasting tightness that have made EVERLASTING Valves famous for over 40 years. Write for complete information.

EVERLASTING VALVE CO., 49 Fisk Street, Jersey City 5, N. J.
Trade Mark "EVERLASTING" Reg. U. S. Pat. Off.

EV-2442

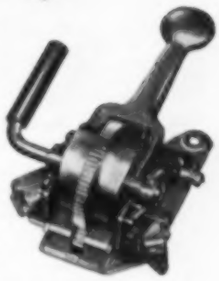
Everlasting Valves

for everlasting protection

If you write maker identify as IEN - 13110

Your Packages Stay Tied with INLAND MODEL "D" WIRE TYING MACHINE

The best assurance you can have that your packages are tied securely is by using the Inland Model "D" and the new 25 lb. packaged round tying wire. This handy combination completes your tying operations in but a few seconds—just a single back-and-forth motion of the lever tensions and ties the wire. Inland round tying wire—in 25 lb. coils—is dispensed absolutely kink-free at all times. It's available in 17, 17½ and 18 gauge, galvanized or coppered. For lower tying costs and higher output, insist upon the Inland Model "D" and packaged round wire. It's an unbeatable combination.



Write for details on the Model "D" and Tying Wire combination.

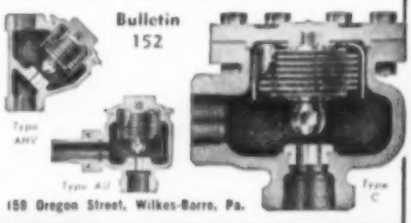
INLAND WIRE PRODUCTS CO.
3963 South Lowe Ave. Chicago 9, Illinois

If you write maker identify as IEN - 13111

NICHOLSON TRAPS

SAVE CAR OF COAL WEEKLY

Following replacement of all steam traps, of various makes, with Nicholson units, an Eastern college reports "an average coal saving of 1 carload per week besides much better heat distribution." Credit is given the higher and more even temperatures which Nicholson traps effect. See why large industrial and institutional steam users are increasingly standardizing on Nicholsons. 5 types; for heat, power, process; sizes ¼" to 2"; press. to 250 lbs.



150 Oregon Street, Wilkes-Barre, Pa.

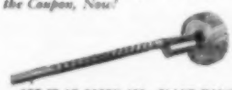
W. H. NICHOLSON & CO.
TRAPS · VALVES · FLOATS

If you write maker identify as IEN - 13112

If CUTTING KEYWAYS For a PENNY-A-PIECE Would Save You DOLLARS

CLIP THIS COUPON NOW

It will bring you the complete catalog on Minute Man KEYWAY BROACH KITS — show you how you can broach any standard width from 1/16" to 1" in any bore from ¼" to 3" *by hand* IN ONE MINUTE for as little as *a penny a keyway*. And you'll get a lot of valuable Keyway reference data, too! *Mail the Coupon, Now!*



SEE IT AT BOOTH 112—PLANT MAINTENANCE SHOW, CLEVELAND

The du MONT CORPORATION, Greenfield, Mass.

Please mail catalog and price list N on *Minute Man Keyway Broaches* also [illegible]

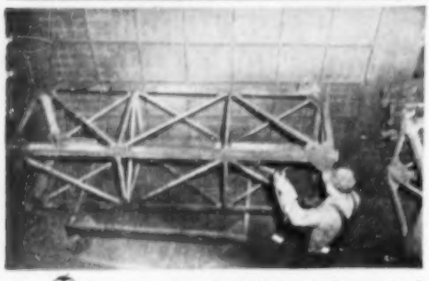
Name .....

Company .....

Address .....

If you write maker identify as IEN - 13113

WHO SAID PAINT OVERSPRAY REMOVAL WAS A PROBLEM?



This RP Paint Arrestor Installation is Economical, Effective. Requires a Minimum of Floor Space.

A wall of R P Paint Arrestors and a blower solved the manufacturer's paint overspray removal problem in painting sections of structural steel in the installation above. Versatile R P Paint Arrestors can be the economical solution for your plant, too.

WRITE FOR FREE BOOKLET

Helpful, informative suggestions to solve your paint spray booth problems. Write today.

RESEARCH PRODUCTS CORPORATION
Dept. IE • Madison 10, Wis.

RP . . . PRODUCTS OF RESEARCH

If you write maker identify as IEN - 13114

FAR-AIR* reduces air filtering costs 1/3!

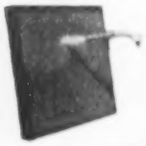
Here's why...

You get more efficient air filtration . . . save valuable space . . . cut maintenance costs.

Here's how...

Far-Air's *exclusive* herringbone-crimp media design allows progressive loading through the depth of the filter.

Two Far-Air filters easily do the work of three ordinary types. You also save on first cost by building smaller plenum chambers and purchasing fewer filters and holding frames.



Far-Air construction permits easy cleaning by flushing with a hose. Filters can be washed and reoiled while in place. Installation and removal is quick and easy.

Other **FAR-AIR** Products include:
Self-Washing Filters — Kitchen Grease Eliminators — Engine and Compressor Filters — Rotary (evaporative) Coolers — Air Baffle Equipment — Filter Servicing Equipment.

FAR-AIR FILTERS — Better by Farr

Fill out coupon, mail today. We'll send you full information on the money-saving features FAR-AIR filters can give you! *Trade Mark Reg.

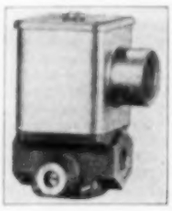
FARR COMPANY
Manufacturing Engineers
LOS ANGELES : CHICAGO : NEW YORK
Mf'd under license by Control Equipment Co., Ltd., Montreal

FARR COMPANY, P. O. Box 10187 Airport Station
Los Angeles 45, California
Please send me complete information on FAR-AIR filters.
I would ☐ would not ☐ like a Farr Field Engineer to assist me with my filter problem.
Name _____ Title _____
Company _____
Address _____

If you write maker identify as IEN - 13116

VALVE . . Solenoid operated for delayed opening, instant closing

Source: MERCOID CORP.
4203 Belmont Ave., Chicago 41, Ill.



About $10 to $12

Type K-28 is a new valve for use with high pressure oil burners to control oil flow for efficient starting and stopping action. The valve mounts in the oil line between the burner pump and the nozzle. It is wired in parallel with the burner motor. Closing the motor circuit starts the valve opening, after about an 8-sec. delay, to permit the burner blower to come up to speed before oil is delivered. Opening the motor circuit results in immediate closing of the valve to prevent after-drip that can result in electrode and nozzle coating or soot accumulation.

Two types are plain and by-pass equipped. Both are fitted with ⅛-in. pipe threaded connections and can be mounted in any position. Operation can be specified on 110 or 220-volt ac. Pressure rating is to 150 pounds.

If you write maker identify as IEN - 13117

SEALING . . Liquid resin to fill the voids in porous castings

Source: POLYPLASTEX INTERNATIONAL INC.
441 Madison Ave., 4th Floor, New York 22, N. Y.

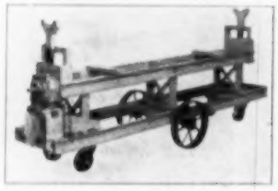
For ferrous and non-ferrous castings

Type MC is a new thermosetting liquid plastic resin for application by vacuum, pressure or a combination of the two. It impregnates porous castings, fills the voids and then cures in place, by application of heat, to make the casting structure permanently sound. There is no resin shrinkage in the curing process so no new voids can be formed that might leak.

If you write maker identify as IEN - 13118

ELEVATOR . . Wheel mounted unit to handle cylindrical work and tools

Source: TOWSLEY TRUCKS INC.
100 Miller St., Cincinnati 23, Ohio



Built to order

Press Make-up designates this new special truck-elevator assembly. It was designed to lift type cylinders into printing presses and is capable of handling a 2,000-lb. load. Maximum lift height is to 60 in. above the floor. Distance between the lifting saddles is 91 inches. Overall width is 32 inches. The assembly employs a crank operated speed reducer and equalizing shaft, operating racks and pinions to lift and lower the saddles.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 69

If you write maker identify as IEN - 13119

PRINT COILED SHEETS AT PRODUCTION LINE SPEED

and change printing die in 30 seconds!

Maintain normal production . . . *and* clearly mark sheet and strip for positive identification with this Pannier "Master Marker". Designed to mark coiled sheet, it can also print any flat material of any thickness, at a rate of 2,000 feet a minute. Pannier brass-backed vulcanized rubber dies, with interchangeable heat numbers, are securely held in slide engagement by a simple spring pin—can be easily changed in 30 seconds. Write today for complete data!

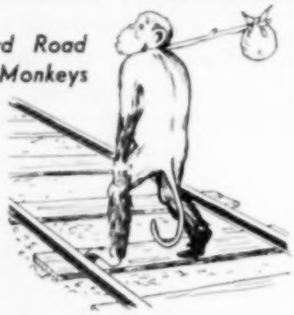
OFFICES:
• Chicago • Los Angeles • Youngstown • Philadelphia • Jacksonville •

SEAMLESS Stencils & Supplies

THE PANNIER CORPORATION
101 Pannier Bldg.
Pittsburgh 13, Pa.

Export Department: Seaconner Bldg., Pittsburgh 6, Pa.

If you write maker identify as IEN - 13120



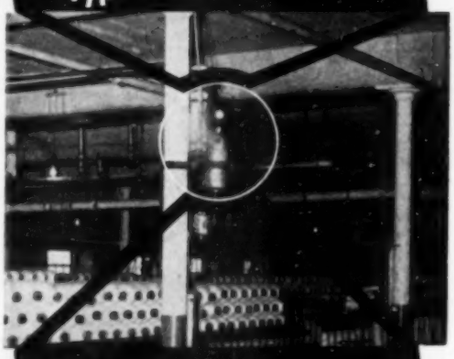
Pre-Lubricated Belt Conveyor Idlers

No Lubrication Labor
No Lubrication Cost

TRANSALL INC.
Manufacturers of a complete line of Belt Conveyor Equipment
117 North 11th St. Birmingham 4, Ala.

If you write maker identify as IEN - 13121

Question: What about Unit Type Steam Humidifiers?



Answer: Armstrong Unit Type Steam Humidifiers are ideal for overcoming wintertime dry air conditions for the following reasons:

- **Fully Automatic.**
- **Accurate Control**—within 1%—2% relative humidity
- **Clean**—no residue in the air
- **Quiet**—acoustically designed
- **No cooling effect**—raise room temperature a degree or two
- **Economical to operate**—pennies per day per unit—½ to ¼ the price of water spray equipment
- **Low in first cost**—approximately $182 complete for a unit to handle up to 40,000 cu. ft.
- **Easy to install anywhere**—hooked up to existing steam and electrical systems much like unit heaters
- **Dependable**—quality materials and workmanship
- **Guaranteed**—complete satisfaction or your money back. Write today.

ARMSTRONG MACHINE WORKS
888 Maple Street, Three Rivers, Mich.

For Full Details Send for BULLETIN 1773

Operating principles, capacities, sizes, prices, hookups, selection data and other useful information — all included in Bulletin 1773. Send for your copy today.

ARMSTRONG Steam HUMIDIFIERS
BUILT BY THE MAKERS OF ARMSTRONG STEAM TRAPS

If you write maker identify as IEN - 13123

MULTIPLE ASSEMBLIES FOR SMALL PARTS BELONG TO HORSE-AND-BUGGY DAYS

GRIES DIE CASTINGS GIVE YOU TINY PARTS LIKE THESE IN

COMPLETE OPERATION

Compare GRC zinc alloy die castings with small parts produced by other methods. See how Gries completely finished parts save you time, labor, money. Die cast in one high-speed operation, they open broad opportunities for your new design and product ideas. GRC offers fast delivery of 100,000 pieces to many millions. Write today for bulletin and samples. Send prints for quotations.

America's Foremost Producers of Tiny Die Castings

SMALLNESS UNLIMITED

Min. Wt.: 1/8 oz.
Min. Lgth.: 3/16 in.

GRIES REPRODUCER CORP.
Manufacturers of Small Castings Exclusively
797 E. 132nd St., New York 54, MOtt Haven 5-7400

If you write maker identify as IEN - 13124

GALS. PER MINUTE
FEET PER HOUR
% SHRINKAGE

All measured electrically with

WESTON TACHOMETERS

Precise indications from ONE rotating shaft

Simply mount the compact a-c or d-c Weston generator at the rotating shaft or part, and wire to one or more indicators placed wherever desired. Indicators can be calibrated for any function of R.P.M. Speed changes indicated instantly and smoothly without pointer oscillation.

Speed-ratio from TWO rotating shafts

New WESTON Tachometer indicates the speed-ratio of 2 rotating shafts or parts. Indicates directly the speed-ratio of rolls, the % stretch or shrinkage of textiles, elongation of metals, etc. Remote and duplicate indications possible, with scale marked in desired units.

New SLOW-SPEED Electrical Tachometer

Expanded scale accurately indicates speeds as low as 1 R.P.M. without pointer oscillation. No intermediate gearing employed. Complete data from your local WESTON representative, or by writing Weston Electrical Instrument Corporation, 627 Frelinghuysen Avenue, Newark 5, New Jersey, manufacturers of Weston and TAGliabue instruments.

WESTON Instruments

If you write maker identify as IEN - 13126

RELAY . . Circuit transfer panel acts when normal power circuit fails

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

To maintain service

Interlocked normal source and emergency source contactors are assembled with a pilot contactor to make up a new transfer device. It will change a circuit over from a normal source that has failed to an emergency source or back again upon resumption of regular service. At the same time the contactors control standby equipment such as an auxiliary generator.

A relay, voltage sensitive, can be added to transfer the load at the closely controlled voltage point. A time delay relay is available also to prevent transfer until after a specified time has elapsed in applications where momentary voltage interruption is a factor in equipment operation.

If you write maker identify as IEN - 13127

GENERATOR . . Engine driven, 3,500 watts, 110 or 220 volts ac.

Source: D. W. ONAN & SONS INC.
25th at University Ave., S. E., Minneapolis 14, Minn.

For utility duty

Model 305CK is a new assembly of 7.2-hp. air cooled 4-cycle gasoline engine and the company's direct connected revolving-armature generator for operation at 1,800 rpm. The assembly is available for remote starting in which the generator serves as the starting motor or for manual starting with the company's unit. Automatic line transfer controls can be supplied.

If you write maker identify as IEN - 13128

STRIPPING . . Roll type machine for wire, melts and removes insulation

Source: ERASER CO.
102-6 S. State St., Syracuse 2, N. Y.

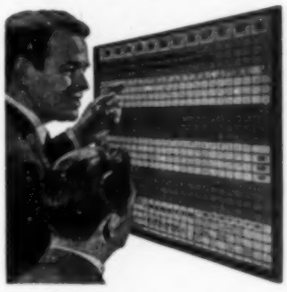
About $160

Model D is a new design in the company's line of roll type wire stripping machines in which a pair of rolls is driven by a motor and is provided with adjustment to develop just enough frictional heat to melt insulation and brush away the residue. One or more wires can be stripped clean in a single quick pass. The company is prepared to supply the machine on a test rental plan or to sell it outright.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13129

You Get Things Done Quicker, Better With the Boardmaster Visual Control



★ Graphic Picture of Your Operations—Spotlighted by Color
★ Facts at a Glance—Saves Time and Eliminates Confusion
★ Simple and Flexible — Easily Adapted to Your Operations
★ Easy to Operate—Type or Write on Cards, Snap on Board
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★ Compact, Attractive, Made of Metal. Over 35,000 in Use.

Complete Price $49.50 Including Cards

FREE 24-Page ILLUSTRATED BOOKLET E-100 Without Obligation

GRAPHIC SYSTEMS, 55 West 42nd St., New York 18

If you write maker identify as IEN - 13130

SAVE MORE TIME AND MONEY IN MATERIAL TIERING WITH THE

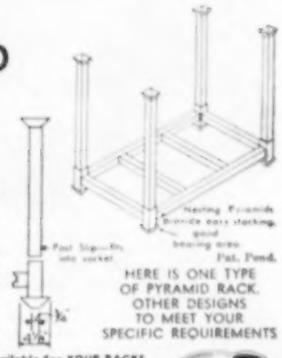
PALTIER PYRAMID RACK

DESIGNED FOR YOUR PARTICULAR REQUIREMENTS.

Exclusive self-aligning feature makes stacking quick and easy.

All steel units insure safety.

All Paltier pyramid racks are designed to meet your requirements regarding load capacity, dimensions, special framing and decking. Posts slip-fit into sockets are easily removed and can be replaced with posts of other lengths.



HERE IS ONE TYPE OF PYRAMID RACK. OTHER DESIGNS TO MEET YOUR SPECIFIC REQUIREMENTS

NESTING PYRAMIDS — available for YOUR RACKS
Paltier will furnish the self-aligning, nesting pyramids at reasonable prices for welding to your equipment. Fits any size post up to 3½ inches square.

SEND TODAY — FOR NEW FREE CATALOG DESCRIBING THE PALTIER SYSTEM FOR BETTER MATERIAL HANDLING

The PALTIER Corp.
1701 Kentucky St.
Michigan City, Ind.

If you write maker identify as IEN - 13131

JOHNSON FLEXIBLE METAL HOSE AND FITTINGS for coolants, lubricants, air

WILL "STAY PUT" WHEN BENT TO ANY POSITION

Five sizes 1/8 to 3/4 in. i.d.
Nine lengths 6 to 36 in. with fittings
Made of oil tempered steel

WRITE FOR FURTHER INFORMATION

JOHNSON METAL HOSE, INC.
P. O. Box 952, Waterbury, Conn.

If you write maker identify as IEN - 13132

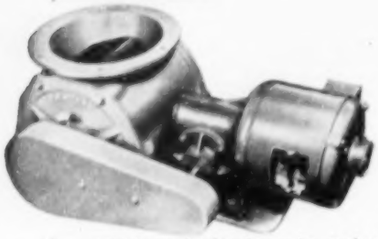
STANDARDIZE ON STANDARD HALLOWELL CABINET BENCHES

Finest all-steel construction, smooth, rigid working surfaces, free-sliding, carefully fitted doors, and roller bearing drawers make HALLOWELL Cabinet Benches outstanding. Simple, functional design blends perfectly with industrial interiors. Standard unit accessories permit you to *custom build* HALLOWELL Benches to your requirements. Write for descriptive literature. STANDARD PRESSED STEEL CO., Jenkintown 14, Penna.

HALLOWELL SHOP EQUIPMENT DIVISION SPS JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN - 13133

PRATER ROTARY AIRLOCK FEEDER



FEEDS powdered and granular products into conveying line—quickly and accurately!

STOPS air leakage at the discharge of dust collectors or other pneumatic equipment!

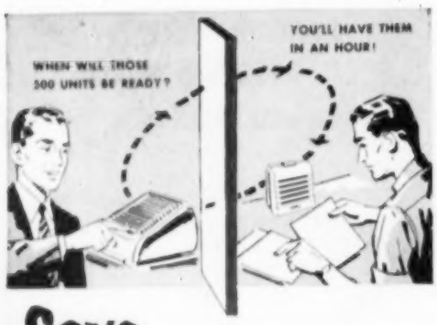
PRE-DETERMINES rate of feeding material into mixers, blenders, hoppers, etc.

RECOMMENDED in the processing of: Ball Clay, China Clay, Diatomaceous Earth, Kaolin, Grains and Feeds, Graphite, Limestone, Whey Powder, Calcium Carbonate, Sulphur, Fullers Earth, Ochre, Volcanic Ash, Bronze Powder, Bauxite, Carbon Black, Salt, Barium Carbonate, Marl, Sugar, Cocoa, Gypsum, Silica, Manganese Sulphate, Phenolic Molding Compound.

Send for new illustrated bulletin

PRATER PRATER PULVERIZER COMPANY
1536 So. 55th Court • Chicago 50, Ill.

If you write maker identify as IEN - 13134



Save Walking Time — *talk instantly!*

● Ever add up the cost of time wasted daily while shuttling about for information and instructions? With Executone you just push a button and talk—*instantly!* No walking, no waiting—*work goes on without interruption.* Maintenance men are located and dispatched *immediately*, reducing machine "down time." Roving employees are quickly located. Telephone lines are kept open for outside calls. Executone cuts costs, increases production, *pays for itself many times over!*

Send the coupon below for full details and description of special Executone features.

Mail Coupon Now!

Executone
INTERCOM SYSTEMS

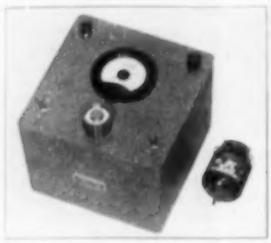
EXECUTONE, INC., Dept. L-5
415 Lexington Ave., New York 17, N. Y.
Without obligation, please send:
☐ The name of your local distributor.
☐ Booklet—"How Executone Helps Cut Costs."
Name _____
Firm _____
Address _____ City _____

In Canada—331 Bartlett Ave., Toronto

If you write maker identify as IEN - 13136

DRIVE . . Variable speed motor and control for 100 to 10,000 rpm.

Source: INDUSTRIAL CONTROL CO.
Arlington Ave. & Straight Path Rd., Wyandanch, N. Y.



For control uses

Torque rating is 1 in. oz. in this new Type 302-A assembly of special motor and its associated control. It represents further development of Type 301-A, previously described IEN-7650-51. Both units are suited for use in the laboratory, as a component in machines for coil winding, conveying spinning and in machine tools to control feed rates and operating speeds. Operation is on 110-volt 60-cycle ac. power supply.

The control housing measures about 7½ by 7½ by 6 in. and weighs about 4 pounds. It mounts a meter on its face calibrated in revolutions per minute. The motor is designed for flange or base mounting. Feedback of the armature voltage through a Thyratron is employed to control motor power and hold speed constant under varying loads.

If you write maker identify as IEN - 13137

VALVE . . Diaphragm operated, two way, sanitary, to process food

Source: FOXBORO CO.
42 Neponset Ave., Foxboro, Mass.

Releases to clean

Saniflo is a new angle type stainless steel sanitary valve fitted with a one-piece stem and plunger in a design that will not provide any position for bacteria to gather. The valve body attaches to the operating diaphragm assembly by a quick disconnecting clamp. There are no gaskets or stuffing boxes.

The valve plunger is a modified parabolic design suitable for throttling as well as for on-off control. The single seat and self-aligning construction provide for tight shut-off in closed position. The diaphragm is reversible for application of air pressure to open or to close. Standard valve sizes are 1 to 3 in. with male valve connections, IAMD threads.

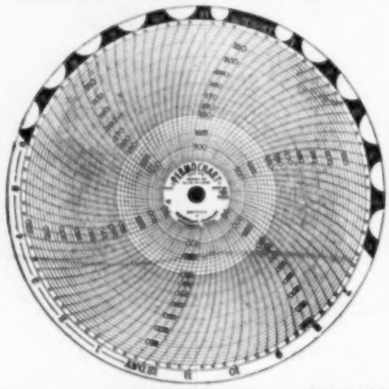
Identify as IEN - 13138

Our current departure from principles set forth in the Constitution, as exemplified by enormous spending and taxation, waste and corruption, is pictured on a new 35-mm. slide film with recording. Harnischfeger Corporation in Milwaukee is the source. "Drums Along the Potomac" is the title. The film takes 15 minutes to show. It is available on a free loan basis except for return transportation fees.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13139

LONG-LIFE PLASTIC CHARTS



Reusable — PERMOCHART* — Washable

You can use WASHABLE laminated plastic "PERMOCHARTS"* on all your circular recording and controlling instruments. Convenient to use, they'll save you time and expense.

• Guaranteed serviceable life — TWO YEARS. • Cost per day only $.00205 to $.00342. • Available for any instrument using circular charts. Made of 100% "Vinylite" plastic laminated construction.

Send for sample of PERMOCHART Construction

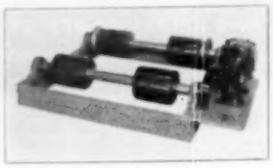
*Reg.

ALLEGHENY PLASTICS, INC.
390 CHESTNUT ROAD SEWICKLEY, PA.

If you write maker identify as IEN - 13140

DRUM ROLLER

Mixes in Suppliers' Drums



AVOIDS:

The fire hazard of open drums
Contamination of one product with another
Cleaning of equipment between mixes
Residual sludge.

ASSURES:

Uniform mix
Easy inspection during operation
Withdrawals in any quantity needed

The VOL-U-METER Company
Buffalo 16, N. Y.

If you write maker identify as IEN - 13141

For a Thousand and One Products

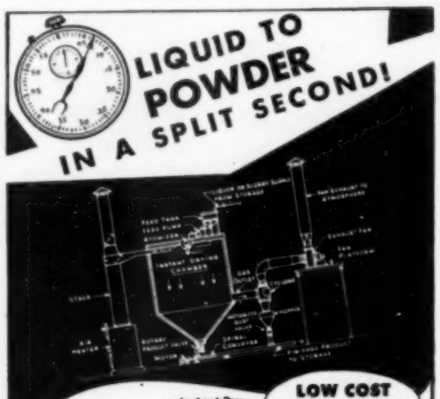
"Folded-and-Formed" Heating Elements

in Standard or Custom-built Racks, are demonstrating their unequaled efficiency and economy, every day, in a wider variety of products . . .

EVERYTHING from Hamburger Grills to Television Tube Annealers . . . Ovens, Dryers, Kettles, Calibrating Tanks, Hot Air Ducts . . . the list is long and growing longer. What is YOUR heating problem? Write for "Folded-and-Formed" facts and figures.

TREN INC
Electrically Heated Industrial Equipment
247 LEVERINGTON AVE. PHILA 27, PA.

If you write maker identify as IEN - 13142



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SOAP POWDERS
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WASTES

LOW COST PRODUCTION DRYING

Instant Drying System Units are operating commercially on the drying of these materials. A large manufacturer of wall tile says their Instant Drying equipment "has produced . . . greater quantity . . . better quality . . . an economy of labor and an ultimate over-all cost reduction for the finished product."

Write us about your drying problem. Arrange with us for test runs on your material at our Poughkeepsie plant.

INSTANT DRYING CORPORATION
106 East 41st Street • New York 17, N. Y.
Engineering by CLARK, MacMULLEN & RILEY, INC., N. Y.

MORE SPEED MORE SUPPORT

PADDOCK BALL-BEARING BAND-SAW GUIDES

CUT MORE MATERIALS— SPEED UP PRODUCTION

Install PADDOCK BALL-BEARING BAND-SAW GUIDES. When a 36" machine is equipped with Model 20 Guides and the guides are adjusted to hold the blade at a 45° angle, material 22" wide can be cut to any length. Note in lower picture angular adjustment. PADDOCK GUIDES are made in several sizes. Ball-bearing wheels turn with the blade—yet give the working portion of the blade friction-free support for steady, safe cutting. Write for circulars and prices. Give size of machines and materials being cut. Write direct to—

PADDOCK TOOL COMPANY
Guide Makers Since 1920
1418 Walnut St., Kansas City 6, Mo.

Paddock BALL-BEARING **BAND SAW GUIDES**

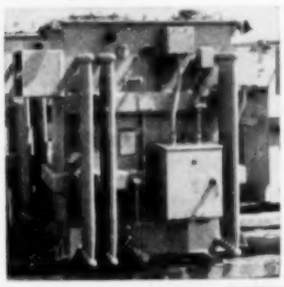
If you write maker identify as IEN - 13144

-- SALE --

NEW ELECTRICAL & CHEMICAL EQUIPMENT

IMMEDIATE DELIVERY

TREMENDOUS SAVINGS can now be had on $1.5 million worth of critical industrial items from a MAJOR PLANT CANCELLATION. Write for listings of BRAND NEW, IMMEDIATELY AVAILABLE equipment.



POWER CENTERS with TRANSFORMERS. 1500- & 600-KVA, 3-hp., 60-cycle. Each 1500-KVA unit includes two 750-KVA 2400/480 V., Westinghouse transformers, and one set of 480-VAC switchgear. 600-KVA unit includes two 300-KVA, 2300/120/208 V. transformers, and one set of 120/208 VAC switchgear.

CAPACITORS. 2400-KVA industrial capacitor assembly, made up from 96 25-KVA capacitors connected in Y for 13.2-KV.; oil switch, rack, fans, protective devices, accessories.

PUMPS. Wide assortment of Manistee, Viking, Allis-Chalmers, Gould, Union, Economy, Peerless, Ingersoll-Rand, DeLaval and LaBour Pumps. Manistee Brine Pumps with motors and accessories.

VALVES. Gate, Globe, Check, Regulating, Safety and Relief, Butterfly and Diaphragm and miscellaneous valves. Lubricated and non-lubricated Plug Cocks. ½" to 18". Up to 3000#.

RECTIFIERS. Ignitrons, 5000-amp., 650 V., cont.-rated, Ignitron-controlled, with vacuum maintaining and indicating equipment, aux. control cubicles, heat exchangers.

Other New Electrical and Chemical Equipment:

MOTOR CONTROL CENTERS • MOTORS
HEAT EXCHANGERS • FANS & BLOWERS
CRANES • BOILER PLANT

POWER & ELECTRICAL EQUIPMENT & BUILDING MATERIALS

FOR INSPECTION or DETAILS, Phone Mr. R. W. Shell, Ashtabula (Ohio) 23-186, Xtn. 43, or write Foster-Hamilton, Box 441, Ashtabula, Ohio.

FOSTER-HAMILTON

P. O. Box 1647
CINCINNATI, O. • PITTSBURGH, PA. • ASHTABULA, O.

If you write maker identify as IEN - 13146

PROTECTING . . Safety shoe designed for executives and foremen

Source: SAFETY FIRST SHOE CO.
952 Mason St., Dept. N-24, Holliston 5, Mass.

Good appearance is combined with a comfort promoting inner sole in this new safety shoe. Foam latex, employed in the inner sole, provides resilient protective comfort under the wearer's foot in addition to the protection provided against falling objects by the regular safety shoe construction.

If you write maker identify as IEN - 13147

CLEANING . . Volatile solvent for electric motors and equipment

Source: NORTHWOODS MFG. CHEMISTS INC.
952 North St., Porterfield, Wis.

Dissolves grease
loosens dirt

A motor that has become clogged with oil soaked dirt or lint can be immersed in the company's new EMC solvent and run in submerged position on its own power for three to five minutes to remove all of the foreign matter. Then, if the motor is removed from the solvent and blown out with dry compressed air, it is ready to be returned to service. If it is a ball bearing motor the oil in the bearings will not be affected. If it is sleeve oiled the reservoirs should be drained and refilled with fresh lubricant.

Application is made in a cover equipped tank to minimize evaporation and workers wear rubber or neoprene gloves or use a good quality of skin cream to replace skin oils removed by the solvent. There is no danger of fire since the material

A companion fluid known as DMC is employed to spray clean heavy equipment including motors, instrument panels.

If you write maker identify as IEN - 13148

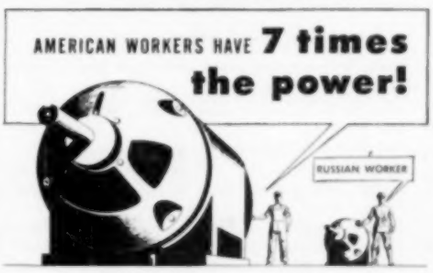
METERS . . Laboratory instruments read ac., dc. volts or dc. amperes

Source: PHAOSTRON CO.
149-53 Pasadena Ave., South Pasadena, Calif.

Four models are included in a new line of ruggedized electric meters, each with five scale ranges. One model reads to 1,000 ohms, per volt dc. A second reads to 20,000 ohms per volt dc. A third reads to 2,500 ac. volts in five ranges and the fourth reads to 500 dc. milliamperes. Range is selected by turning a knob on the side of the housing. Only one scale appears at a time in the window opening at the front.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN - 13149



How does America do it?

Why does the American worker have the help of about 7 times as many kilowatt-hours of electric power as is available to the Russian worker? How can we Americans produce over 40% of the world's goods with less than 6% of the world's people? Why is the American output per-man-hour still growing faster and faster?

The answers are not hard to find. Including 1952, private industry in the last 7 years will have invested over 150 billion dollars in new plant and equipment. This contrasts with Federal Government investment of not much more than 12 billion for similar purposes.

Back of all this progress in private industry is the American system of competition. This system promotes the growth of more business—more jobs. Let's all work to preserve it.

This report on PROGRESS-FOR-PEOPLE is published by this magazine in cooperation with National Business Publications, Inc., as a public service.

THE COMPETITIVE SYSTEM DELIVERS THE MOST TO THE GREATEST NUMBER OF PEOPLE

If you write maker identify as IEN - 13150

Cut Production Costs on small Precision Parts with Atlas 10" Lathes

Handle the work big lathes can't do economically

The low-priced Atlas "Quick-Change" 10" Lathe is tops in the shop—for precision work and economy. With 10" swing (6½" over carriage), 24" and 36" between centers, and 16 spindle speeds from 28 to 2072 RPM, it has the capacity for most small parts operations—and it's much cheaper to run than bigger lathes.

Instant selection of 54 threads and feeds saves set-up time, speeds production. And with its heavy, massive construction, precision-ground ways, and Timken Tapered Roller Bearings, the Atlas is an accurate, smooth-operating lathe that is ideal for both round-the-clock production and tool room use. Send for latest catalog with complete facts. Atlas Dependable Quality Tools Since 1911.

ATLAS PRESS CO.
1107 N. Pitcher St., Kalamazoo, Mich.

Atlas DEPENDABLE QUALITY TOOLS SINCE 1911

If you write maker identify as IEN - 13151

LOOKING FOR AN EFFICIENT CLAMP?

- of the right design
- the right size
- the right pressure

Look to KNU-VISE

for the right answer to your clamping problems

A with vertical handle
B with horizontal handle
C with side mount
D with swivel positioning
E push and pull type
F air-operated
G pliers
H C clamps

Sales offices in principal cities. Teletype DE-49

KNU-VISE PRODUCTS **LAPEER MFG. CO.**
3060 DAVISON ROAD • LAPEER, MICHIGAN
WESTERN DIVISION: 422 MAGNOLIA STREET • GLENDALE, CALIFORNIA

If you write maker identify as IEN - 13152

Because they are all metal and require no auxiliary locking device, FLEXLOC Locknuts *lock* and *stay locked* even at higher temperatures. Write for descriptive literature and samples. STANDARD PRESSED STEEL CO., Jenkintown 14, Pennsylvania.

FLEXLOC LOCKNUT DIVISION **SPS** JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN - 13153

You Will Reduce Cost of DRUM and BARREL HANDLING

One man, without help, easily handles containers weighing up to 800 pounds. You save the cost of helpers, and time, when you use a

SABIN BARREL TRUCK

Loads are picked up automatically. You simply run the truck up to container, hook on at top, and pull back on handle—that's all.

Third Wheel Feature provides better balance and added safety.

Write for Bulletin No. 48 A

THE SABIN MACHINE CO.
6540 Carnegie Ave., Cleveland 3, O.

Type "L-3"

If you write maker identify as IEN - 13154

Safety STEEL STEP LADDERS

FOR EVERY NEED

With safe, sure footing anybody reaches high places easier, with a sense of security that permits complete freedom of action to get the job done. Ballymore Ladders are sturdy and safe, can't roll when in use or kick out, have lots of foot room, strong hand rails. All welded construction. Ball bearing casters permit easy movement without lifting. One to three steps without hand rails. Three to eight steps with hand rails. "Special" models.

WRITE TODAY FOR COMPLETE CATALOG

BALLYMORE CO
WAYNE 4, PA.

If you write maker identify as IEN - 13155

HOW TO PICK THE RIGHT PUMP FOR YOUR PURPOSE

Tuthill now makes it easy for you to select the pump best-suited to the service you require. In one simple, letterhead-size table, the Tuthill Pump Guide gives you the details you need—types of service, pump models for each, capacities, pressures, speeds, packing, mountings, and exclusive features. Saves time, work and trouble.

Write for this PUMP GUIDE today!

THIS?...

THIS?...

THIS?...

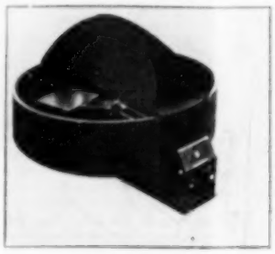
or THIS?

TUTHILL PUMP COMPANY
939 East 95th Street, Chicago 19, Illinois

If you write maker identify as IEN - 13156

TESTING . . Rotating table checks effect of variable acceleration

Source: GENISCO INC.
2231-35 Federal, Dept. IEN, Los Angeles 64, Calif.



Simulates service conditions

Model C is a new G-Accelerator with an 8-ft. table in the company's line, previously described IEN-7089-50. It includes optical, pneumatic and electrical equipment to test aircraft and guided missile components of a larger size than could be handled on the previous unit. It applies a steady force of controlled magnitude to parts or assemblies for calibration or to observe their behavior under simulated operating conditions.

A tachometer and a timer combined with a solenoid-operated revolution counter measure speed. A stroboscope light and disc can be added as optional equipment. The hydraulic variable speed transmission can be adjusted in stepless progression. Controls center at a panel on one side of the housing.

Speeds, adjustable from 5 to 280 rpm., can be established with the work mounted in the center of the 24-in. square platform to develop normal acceleration forces to 75 G. Maximum capacity is for a 100-lb. work piece measuring 18 by 18 by 24 inches. Maximum acceleration is 100 lb. at 20 G, 40 lb. at 50 G.

If you write maker identify as IEN - 13157

PAPER . . Sheet materials resin impregnated for fabrication

Source: ARMSTRONG CORK CO.
1012 State St., Lancaster, Pa.

To replace felt or board

The company has developed a new beater saturation process with which it treats paper fibers with water dispersions of rubber or resin to produce sheet materials of various characteristics including high compressibility, crush resistance, imperviousness, flexibility, uniformity. Four products, known as CS-402A, CS-403, CS-404 and CS-405 are supplied in rolls measuring 12 to 72 in. in width. Thickness ranges from 0.020 to 0.125 inch. Density is 15 to 50 lb. per cubic foot. Roll diameters are 15 to 48 inches. The materials are also available in sheets to 72 by 72 inches.

Type CS-405 Pressed is a lamination of several sheets of CS-405 cured under heat and pressure. This material is available in 36 by 36-in. sheets. Type CS-406 is a laminated product, also employing special resins and new rag furnishes. Curing is under heat and pressure to product 36 by 36-in. sheets with gage and density to specification.

Type CS-402A is a thermo-plastic material that can be embossed under heat and pressure. Type CS-403 is strong when wet or dry. Type CS-404 provides a good cushion effect and can be made in dark and light colors for hand bags and leather goods and as a backer for coated products where cushioning is a factor. Type CS-405 is a low priced material for use where current papers are not sufficiently strong or where requirements call for better than average water resistance. Type CS-406 can be shaped and formed under heat and pressure.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

If you write maker identify as IEN - 13158

WHAT are YOU selling ?

Many of our best satisfied advertisers first learned of IEN as *readers*.

They used the information in IEN to select and buy products.

But their firms had products to sell, too.

And they realized that IEN couldn't be so helpful to the buyer without being equally helpful to the seller.

So they passed the word along to their Sales Department or the Advertising Department. And, with such a recommendation, a new IEN advertiser resulted.

IEN is not only efficient as a sales medium, it is one of the very thriftiest. The standard 1/9th page ad, like this, costs only $150 to $160 a month. And, it reaches more than 62,000 men like yourself with industrial buying influence, concentrated in the 38,000 plants where the big buying is done.

Sales and advertising executives value the opinions of buyers in their own companies who have had practical experience as readers and users of a helpful publication.

So you will be doing your company a favor—as well as IEN—if you will make known, through the right channels the value of IEN to you in finding products you need!

If you want the full story of IEN as a sales maker, just enter the number of this ad on your inquiry slip and mail it as usual.

If you write maker identify as IEN - 13159

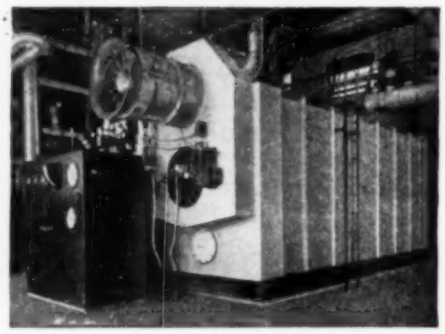
DON'T THROW AWAY YOUR OLD FILES!

Modern Plant with facilities developed exclusively for RESHARPENING any make, length, shape and cut AMERICAN PATTERN, SWISS PATTERN and MILLED CURVED TOOTH FILES. Our workmanship is the finest quality and prompt service is guaranteed. Inspect our workmanship for yourself—send us sample files—we will RESHARPEN them free of charge.

Let us resharpen them at 1/3 the cost of a new file. No acid used.

WHARTON FILE CO., Inc.
234 West Central Avenue
WHARTON, N. J.

If you write maker identify as IEN - 13160



Popular Choice for "Packaged" Steam

The shop-assembled B&W Integral-Furnace Boiler, Type FM, has gained industry-wide acceptance. Prominent companies in over 50 different industries, along with numerous utilities, educational institutions, hotels, hospitals, housing projects, office buildings, and government agencies, have already selected this compact, self-contained steam generating unit for installations in 34 states, three U. S. territories and five foreign countries. Total steam capacity of units now in service and on order exceeds 5½ million pounds per hour. Nearly half of this capacity consists of multiple-unit applications of FM boilers instead of single larger-capacity units.

This recent B&W creation in low-cost steam generation is available in standardized sizes for loads of 2900 to 28,000 lb. per hr. at steam pressures to 250 psi.

Send for Bulletin G-76 describing and illustrating the many cost-saving features of this popular boiler. The Babcock & Wilcox Company, Boiler Division, 161 East 42nd St., New York 17, N. Y.

BABCOCK & WILCOX

G-573

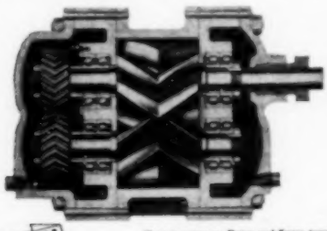
If you write maker identify as IEN - 13162

WARREN-QUIMBY ROTEX PUMPS are *Versatile*

For pumping lubricating, non-lubricating and viscous liquids such as acids, alkalis, coolants, diesel oil, dyes, fuel oil, gasoline, inks, lube oils, molasses, paints, paraffine, shellac, solvents, syrup, tar, varnishes and many other liquids.

TWO GENERAL TYPES AVAILABLE: Gear-in-head for clear liquids having sufficient lubricating qualities to protect driving gears and bearings. External gear and bearing for non-lubricating liquids, such as gasoline, heavy tars, asphalts, acids, etc.

Warren Plant Facilities, Dependability, Quality and Service now behind WARREN-QUIMBY Pumps.



Your enquiries on Rotex and Screw types, as well as Warren's complete line of Centrifugal and Reciprocating Pumps are solicited.

IEN-6

WARREN QUIMBY PUMPS

WARREN PUMPS

WARREN STEAM PUMP COMPANY, INC. • 62 Bridges Ave. • Warren, Mass.

If you write maker identify as IEN - 13163

FAR LESS TIP BREAKAGE with "RING SEAT" CENTER DRILLS

Link Industries specializes in drills of the center-drill type only.

We make them on specially designed machines to assure consistently close tolerances.

We make them in three styles, each to meet a specific condition.

The "R" Type For Precision Parts

These curving contour Ring-Seat Center Drills give you a stable, accurate, burnished-band precision center.

After heat-treat this bearing surface is quickly restored by lapping—in less than half the time required for conventional centers.

The "R" center is automatically a protected center.

The "S" Type For Heavier Work

This Ring-Seat Drill produces a center with a pre-formed 60 degree band for heavy duty work.

Beyond this 60 degree bearing surface the center produced flares out at 82 degrees, so that it is a safety center. After heat-treat the bearing surface is readily lapped out.

With its 82 degree flare, this "S" Type Drill has added utility. It is a rugged, one-operation tool for drilling and counter-sinking holes in sheets and plates for rivets and flat or oval-head machine screws.

Conventional Type

Users of our Type "R" or Type "S" Center Drills often encounter shop drawings that specify the use of conventional centers. So that they may obtain Ring-Seat quality throughout, we now produce conventional 60 degree center drills in the same sizes as our other types.

These Conventional Center Drills are held to the same close tolerances as our other types.

PREMIUM DRILLS • AT NO EXTRA COST •

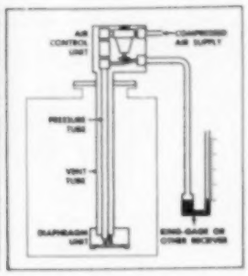
LINK INDUSTRIES

13848 Elmira Detroit 27, Mich. FREE CIRCULAR

If you write maker identify as IEN - 13165

GAGE . . Pressure transmitter reads liquid level in a storage tank

Source: KING ENGINEERING CORP. Box 530-A, Ann Arbor, Mich.



Data and diagrams in Bulletin 328

Liquid level is read as a function of pressure in an open or closed tank without permitting the liquid to contact the gage mechanism in this new Pressure Transmitter. Liquid pressure applies on the outer side of a diaphragm and is continuously balanced by a regulated and metered air supply delivered to the opposite side of the diaphragm. This air supply is transmitted through a pipe or tube to the receiving instrument at which the reading is made on a hydrostatic gage, manometer, pneumatically-actuated recorder.

Readings are accurate within ¼ in. of water in a vented tank and within ⅛ in. on a pressurized tank. Calibration can be specified in depth, weight, volume. Several designs are available to meet mounting and installation requirements.

The gage is particularly suited for fluids that would prevent proper functioning or would attack the construction materials in the mechanism. These include acids, alkalis, solvents, hot tar, food products. Pressure range is from 0 to 45 lb. with ability to withstand over-pressure to 250 pounds. A supply of clean dry instrument air, at 70 lb. or higher, is required for the operation. Air consumption is within 4 cfh.

If you write maker identify as IEN - 13166

RETRIEVING . . Spring operated reel handles 150 ft. of No. 4 electric cable

Source: INDUSTRIAL ELECTRICAL WORKS 1805 Chicago St., Dept. 28-A, Omaha 2, Neb.

Range of sizes

Spring-O-Matic is a new unit in the company's Powereel line to handle single or multiple conductor cable. Mounting can be on the floor, ceiling or wall. A ratchet holds against retraction, will operate in any position. This ratchet can be released to retract the cable by spring action set up when the cable is pulled out. It can be locked in or out of functioning position as desired.

The cable feeds through a guide that can be moved to any position to permit pulling down, up or out. Bearings are ball bearing design.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

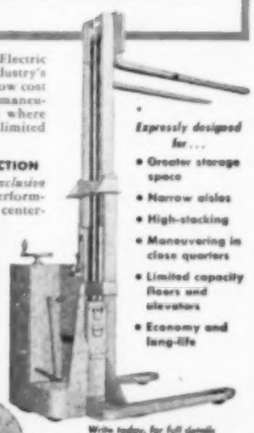
If you write maker identify as IEN - 13167

NEW *Automatic Transveyor*

This new Automatic Electric Truck is the answer to industry's need for a more compact, low cost Stacker. It is engineered to maneuver in six foot aisles and where floors and elevators have limited capacity.

EXCLUSIVE BALANCED ACTION

The Transveyor has two exclusive features that insure better performance, longer life. **1.** The center-pivot design compensates for irregular floor surface thus eliminating frame distortion and uneven load distribution. **2.** Drive and idler wheels are tie rod connected. This wheel alignment prevents costly, scrubbing action that results in excessive tire wear to non-drive wheel.



Expressly designed for . . .

- Greater storage space
- Narrow aisles
- High-stacking
- Maneuvering in close quarters
- Limited capacity floors and elevators
- Economy and long-life

Transveyor STACKER A PRODUCT OF AUTOMATIC

Write today, for full details

Automatic®

® Registered Trade Mark

1209 W. 67th Street, Dept. W-Z, Chicago 20, Ill.

If you write maker identify as IEN - 13168

UNIVERSAL DRILL BUSHINGS in a complete variety of sizes and shapes

Universal Drill Bushings are produced in a complete range of standard sizes and lengths. Prompt attention is also given to orders for special dimensions. Universal Drill Bushings are precision machined with super finish bores to reduce wear, and a blended radius to keep tool hang-up and breakage to a minimum. 100% concentricity and hardness tests insure absolute accuracy, uniform high quality, and long life. Write today for complete information.

167-A

The modern home of finer production tools

UNIVERSAL ENGINEERING COMPANY

FRANKENMUTH 6, MICHIGAN

If you write maker identify as IEN - 13169

JOHNSON Direct Acting Solenoid Valve — for 150 lbs. Differential Pressure . . .

You can get a solenoid valve that operates under differential pressures up to 150 lbs., temperatures to 400°F., *without pilot valves*. It ends the time lag and wiredrawing that come with slow opening—the danger of sticking that comes with auxiliary pistons. It offers unusual possibilities for all types of automatic, or remote, flow control. Johnson Solenoid Valves are available for normally closed or normally open service; with stainless steel valve and seat or Jenkins disc; in sizes from ½" to 3".

Write for Bulletin "V"

WHERE CAN YOU USE THIS AUTOMATIC VALVE?

- No pilot valves
- Temperatures to 400°F.
- Differential Pressures to 150 lbs.
- Immediate full flow
- Heavy duty construction

The Johnson Corporation

846 WOOD STREET THREE RIVERS, MICHIGAN

If you write maker identify as IEN - 13170

NO CHANCE FOR ERROR! WHEN YOU USE STONHARD STONPACH

FOR REPAIRS TO CONCRETE FLOORS RUINED BY ACIDS, GREASE, OIL OR EXCESSIVE WATER

ALL INGREDIENTS IN ONE CONTAINER

. . . you just add water! With STONPACH you get a flint-hard, non-disintegrating patch or complete overlay that can be installed in less time and lasts longer. Only ½ inch is necessary and it bonds securely to your present concrete without shrinking. Find out about STONPACH. Fill out and mail the coupon below for full details.

STONHARD COMPANY

Building Maintenance Materials since 1922

102 Stonhard Building, 1306 Spring Garden St., Philadelphia 23, Pa.

Please send me your STONPACH Folder: 102/11/52

Name _____

Company _____

Address _____

City _____ Zone _____ State _____

If you write maker identify as IEN - 13171

MAKING A *CLEAN SWEEP*

FEWER punctures — that's what this STEARNS Road Sweeping Magnet means to Kentucky motorists. On the job every day, this magnet picked up 25 lbs. of puncture producing material — the equivalent of 2500 possible punctures — on a recent six-mile run.

Magnets like these are only part of our extensive line of magnetic separators, pulleys, drums, suspended and lifting magnets that STEARNS Magnetic offers for protection, reclamation, purification, concentration and separation purposes.

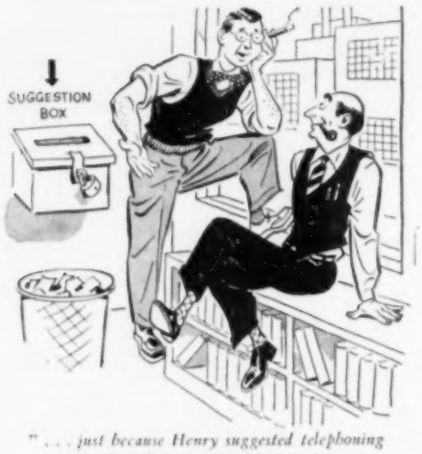
Consult STEARNS — more than two generations of magnetic engineering experience at your disposal.

Foremost in the Magnetic Field

Stearns MAGNETIC INC.

626 South 28th Street • Milwaukee 46, Wisconsin

If you write maker identify as IEN - 13172



". . . just because Henry suggested telephoning Alvey-Ferguson in Cincinnati about a new conveying system for our plant, the boss awarded him First Prize."

For Engineered Conveying Systems

THE ALVEY-FERGUSON COMPANY

Since 1901

344 Disney Street CINCINNATI 9, OHIO

Representatives in Principal Cities

If you write maker identify as IEN - 13173

BLACK & DECKER SCRUGUN* MADE 50% MORE POWERFUL

TOWSON, MD.—Good news for production men is the Black & Decker No. 12 Scrugun that has been made 50% more powerful. Capacity formerly rated at #10 wood screws has been increased to #12. A new handle shape gives plenty of finger-room, and weight has been held to only 3¾ lbs. Overall length is just 9". Typical of Black & Decker tools, the new Scrugun is constructed with husky high-quality parts, designed for continuous operation. For demonstration, see any B&D Distributor. For free literature, write: THE BLACK & DECKER MFG. CO., 608 Pennsylvania Ave., Towson 4, Md.

BLACK & DECKER No. 12 SCRUGUN ONLY $59.50

*Trade Mark Reg.

LEADING DISTRIBUTORS EVERYWHERE SELL

Black & Decker PORTABLE ELECTRIC TOOLS

"I WISH I HAD"

This column concentrates upon reader requests for information on sources of supply for products or services or technical advice which we ourselves cannot supply, advises you of new patent-protected products for your possible manufacture, and available surplus of specialized products.

It is published to invite your suggestions and comments, which are forwarded immediately to the orignator, just as we will be happy to publish similar problems for you.

BALING . . "I wish we had a source from which we can purchase a used baling machine for paper scrap, one that is in good condition and has a 60 in. up-stroke. We are located near Philadelphia." **IEN W-104**

NEW PRODUCT . . "I wish we had a manufacturer interested in purchasing manufacture and sales rights complete with dies, fixtures, special tools and patent assignment for our spring making attachment. We have made and sold about 700 units. It was described IEN-491-50." **IEN W-105**

PROTECTING . . "I wish we had the name of the manufacturer of the punch press safety device that employs a Geiger type radiation detector on the press and a wrist band containing radium to be worn by the operator." **IEN W-106**

SURPLUS . . "I wish I had a buyer for approximately 70,000 Morse high speed twist drills, mechanic's length, in seven sizes ranging from $\frac{1}{16}$ to ¼ in. by 32nd-in. steps. Quantities in each size range from 5,000 to 15,000 pieces. The stock is in Burlington, Vermont." **IEN W-107**

SURPLUS . . "I wish I had contact with a purchaser for a new Bridgeport No. 400 cutlery grinder. It is in storage in Connecticut." **IEN W-108**

SURPLUS . . "I wish we had a buyer for all or part of our surplus stock of about 63,000 machine bolts, all $\frac{1}{16}$ in. by ⅝ to 1½ in. in length, 29,000 stove bolts $\frac{1}{16}$ in. by ¼ to ¾ in. in length and 5,000 carriage bolts $\frac{1}{16}$ in. by 1¼ and 1¾ in. in length. We also have 25,000 lb. of cold rolled steel strip R-55-65 measuring 0.140 by 4¼ by 96 in., all in Au Gres, Michigan." **IEN W-109**

SURPLUS . . "I wish we had a buyer for our surplus stock of Catalog C-648 Curtis steel universal joints with hub diameter measuring 1¼ in., overall length at 3¾ in., and weight at 1.15 pounds. These are the same style as the current Type J-125 Curtis universal joint. All 500 are new and in original wrapping. Toledo, Ohio." **IEN W-110**

SURPLUS . . "I wish I had a buyer for 9,500 ft. of 4-in. steel reinforced suction hose in 30-ft. lengths complete with couplings to handle oil or gasoline. The hose is new and is stored in Denver, Colo." **IEN W-111**

TRADE NAME . . "I wish I had the name of the manufacturer of glass trade-named of Durex or Dyrex." **IEN W-112**

PLEASE WATCH FOR YOURS

Certain copies of this publication for the next few months will carry a post card on the front page. It is intended for your use to make sure you still want to remain on our mailing list. Please watch for the one with your name on it.

OK or correct your name and address as they appear on the card. Please also check the question asked. They are simple, self-explanatory, essential to our circulation audit.

If you write maker identify as IEN - 13174

$42 IN U.S.A.

THEY GRIND--NOT JUST RUB!

The RPM's stay up while grinding . . . not only when the grinder runs idle.

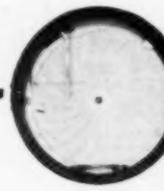
It is an established fact that surface speeds must stay up to approximately a mile a minute if you want to grind . . . not just rub. Every mechanic knows this, but an inexperienced buyer may order tools that maintain proper grinding speeds only when running idle. The speed of Kipp air grinders drops but slightly when put to work. That means better work . . . longer wheel life.

MADISON-KIPP CORP.

224 Waubesa St., Madison, Wis., U. S. A.

Write for KIPP Air Tool Catalog AT 3006

If you write maker identify as IEN - 13175



RECORDERS . . . with High Sustained Accuracy

Time-proved features such as the pivoted pen arm movement, automatic chart hub, Humitex Chart . . . all help to make Foxboro Recorders the choice of leading industries throughout the world. They assure easy operation and maintenance. Dependable accuracy and long-life characterize all Foxboro Instruments.

Foxboro Recorders are available in round or rectangular cases . . . for temperature, pressure, flow, liquid level and other process variables . . . in portable, long-distance and multiple-pen types. Write for details. The Foxboro Company, 4211 Neponset Ave., Foxboro, Mass., U. S. A.

FOXBORO RECORDERS

Reg. U. S. Pat. Off.

If you write maker identify as IEN - 13176

Every driver in the complete Stanley line is made for fast, accurate tightening. Blades are carefully tempered for maximum toughness . . . tips are accurately cross-ground, fit snug in screw slots . . . and large, comfortable handles provide a sure grip every time. For safety's sake and better work, replace your worn drivers now. Standardize with Stanley . . . you'll get more for your money. Your distributor carries these Stanley Drivers and a complete line of Stanley Tools. Stanley Tools, New Britain, Connecticut.

No. 20 — The famous "Hurwood". One-piece blade, shank and head forged from finest alloy steel. Hardwood handle. Standard blade and tip. Available in 2½, 3, 4, 5, 6, 8, 10, 12" blade lengths.

No. 1006 — Rugged "Stanlaid" Driver. Tough plastic handle stands plenty of abuse. Blade with bolster to take extra strain. Available in five blade lengths—4,6,8,10,12".

No. 2702 — For Phillips Screws and Bolts. Alloy steel bar securely fastened to hardwood handle. Precision-machined points — available in four point sizes for all Phillips Screws.

STANLEY THE TOOL BOX OF THE WORLD

Reg. U.S. Pat. Off.

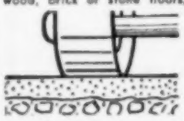
HARDWARE • TOOLS • ELECTRIC TOOLS • STEEL STRAPPING • STEEL

If you write maker identify as IEN - 13177

NEW FLOORS In 24 Hours

BONDS PERFECTLY — NEVER COMES LOOSE

No Chipping required — Install directly over your old concrete wood, brick or stone floors, walks or drives. Interior or Exterior.



PERMAFLEX Floors will not rut under 3000 lbs. pressure per square inch.

OLD MASTICS RUT and DENT under 300 lbs. per square inch.

HARD MASTIC

HEAVY DUTY • DUSTPROOF • WATERPROOF • FIRE-RESISTANT • RESTFUL • QUIET • SLIP PROOF • SANITARY

Many users apply "PERMAFLEX" over new concrete to prevent wearing away of the concrete under truck wheels and thus preserve structural strength.

The most severe trucking conditions in 1000 of the largest industrial plants show no destructive effect on "PERMAFLEX" after years of use.

AMAZING! UNBELIEVABLE! Until you try "PERMAFLEX"

Test 100 square feet and be convinced. Write for literature and trial offer.

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INSTALL COMPLETE 15c per square foot

PERMAFLEX PRODUCTS COMPANY

1846 NORTH FRONT STREET, PHILA. 22, PA.